



Top Secret

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



25X1

Two horizontal lines for text entry

basic imagery interpretation report

Activity at Selected Soviet Space Tracking Facilities (S)



DEPLOYED COMMO/ELEC/RADAR FACILITIES
BE: Various
USSR

Top Secret



25X1
RCA-03/0001/82
MAR 25 1982
Copy 23

Page Denied

INSTALLATION OR ACTIVITY NAME					COUNTRY
Activity at Selected Soviet Space Tracking Facilities					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	See below	See below	See below	See below	See below

MAP REFERENCE

SAC. USATC, Series 200, Various sheets, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
	NA

25X1

Installation Name	Geographic Coordinates	Category	BE No	COMIREX No	NIETB (MRN) No
Akstafa Space Tracking Facility	41-08-30N 045-33-10E				
Alushta Satellite Communications Station	44-43-45N 034-29-05E				
Andreyevka Satellite Communications Station	44-30-30N 133-29-28E				
Ashkhabad ESV Tracking Facility	37-53-37N 058-22-39E				
Barnaul Space Tracking Facility	53-18-32N 083-21-59E				
Galenki ESV Tracking/Molniya Facility	44-01-20N 131-45-47E				
Galenki Space Tracking Facility North	44-03-57N 131-40-19E				
Kalyazin Deep Space Tracking Facility*	57-13-20N 037-54-05E				
Kamenets-Podolskiy Space Tracking Facility	48-51-10N 026-43-00E				
Kirzhach Dual Rate Facility	56-05-10N 038-27-36E				
Kirzhach Space Tracking Facility	56-03-12N 038-30-12E				
Kolpashevo ESV Tracking Facility	58-20-02N 082-53-01E				
Kolpashevo ESV Tracking Radcom Transmitter Station	58-19-10N 082-57-55E				
Komsomolsk Satellite Communications Station North	50-41-40N 136-44-57E				
Leningrad Space Tracking Facility	59-43-00N 030-10-00E				
Moscow/Shchelkovo ESV Tracking Facility	55-56-55N 037-57-58E				
Moscow/Suponino Space Tracking Facility	55-51-53N 037-57-30E				
Moskva E-21 Satellite Control Facility	55-03-50N 037-03-03E				
Naryan-Mar Telemetry/Tracking Facility	67-36-11N 052-58-48E				
Norilsk Telemetry Tracking Facility	69-21-40N 088-12-20E				
Plesetsk ESV Tracking Facility	62-53-58N 040-33-39E				
Pogranichnyy ESV Tracking Molniya Facility	53-06-03N 158-21-22E				
Pushkino Space Tracking Facility	56-00-55N 038-00-29E				
Sary-Shagan ESV Tracking/Molniya Facility	45-53-35N 073-37-13E				
Simferopol Space Flight Center	45-03-23N 033-53-35E				

25X1

25X1

Top Secret

Installation Name	Geographic Coordinates	Category	BE No	COMIREX No	NIETB (MRN) No
Talsi Space Tracking Facility	57-17-07N 022-35-42E				25X1
Tarusa Space Tracking Facility*	54-42-50N 037-11-10E				
Tbilisi Sartichala ESV Tracking Facility	41-42-19N 045-09-46E				
Tyuratam Deep Space Tracking Facility	45-42-16N 063-20-21E				
Tyuratam ESV Tracking Facility	45-54-25N 063-20-12E				
Ulan-Ude ESV Tracking Facility	51-52-02N 107-57-27E				
Vicak Space Tracking Facility	57-33-30N 021-51-00E				
Vorkuta ESV Tracking Facility	67-32-45N 064-08-58E				
Yakutsk Space Tracking Facility	61-58-30N 129-39-10E				
Yeniseysk ESV Tracking/Molnya Facility	58-26-45N 002-16-14E				
Yevpatoria Deep Space Tracking Facility Central	45-11-25N 033-11-17E				
Yevpatoria Deep Space Tracking Facility North	45-13-17N 033-09-55E				
Yevpatoria Deep Space Tracking Facility South	45-10-20N 033-15-20E				

*Identified since March 1979.

ABSTRACT

1. (S/D) This report consolidates imagery-derived information obtained since March 1979 on 38 Soviet space tracking facilities. The report includes the identification of new antenna control buildings for 12-meter-diameter antennas, a new deep-space tracking facility, five new 64-element telemetry antennas, a new dual-position and two new single-position control buildings for [redacted] diameter antennas, six new QUAD LEAF antenna control buildings, and a new probable BOW AND ARROW (VT-3) interferometer under construction.

25X1

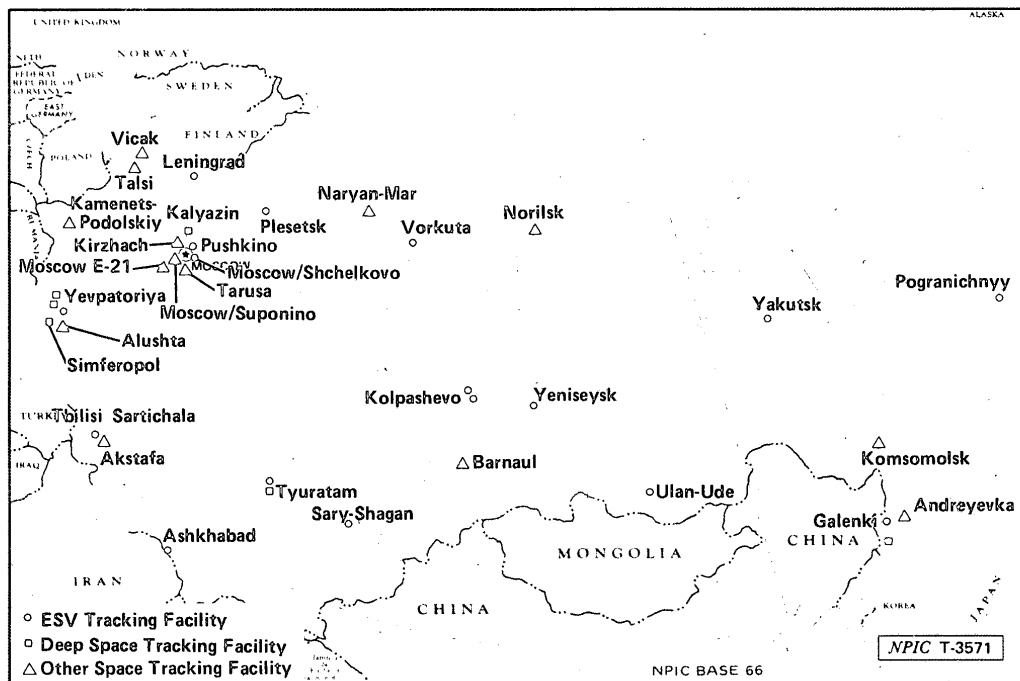


FIGURE 1. LOCATIONS OF SOVIET SPACE TRACKING FACILITIES IN THE USSR

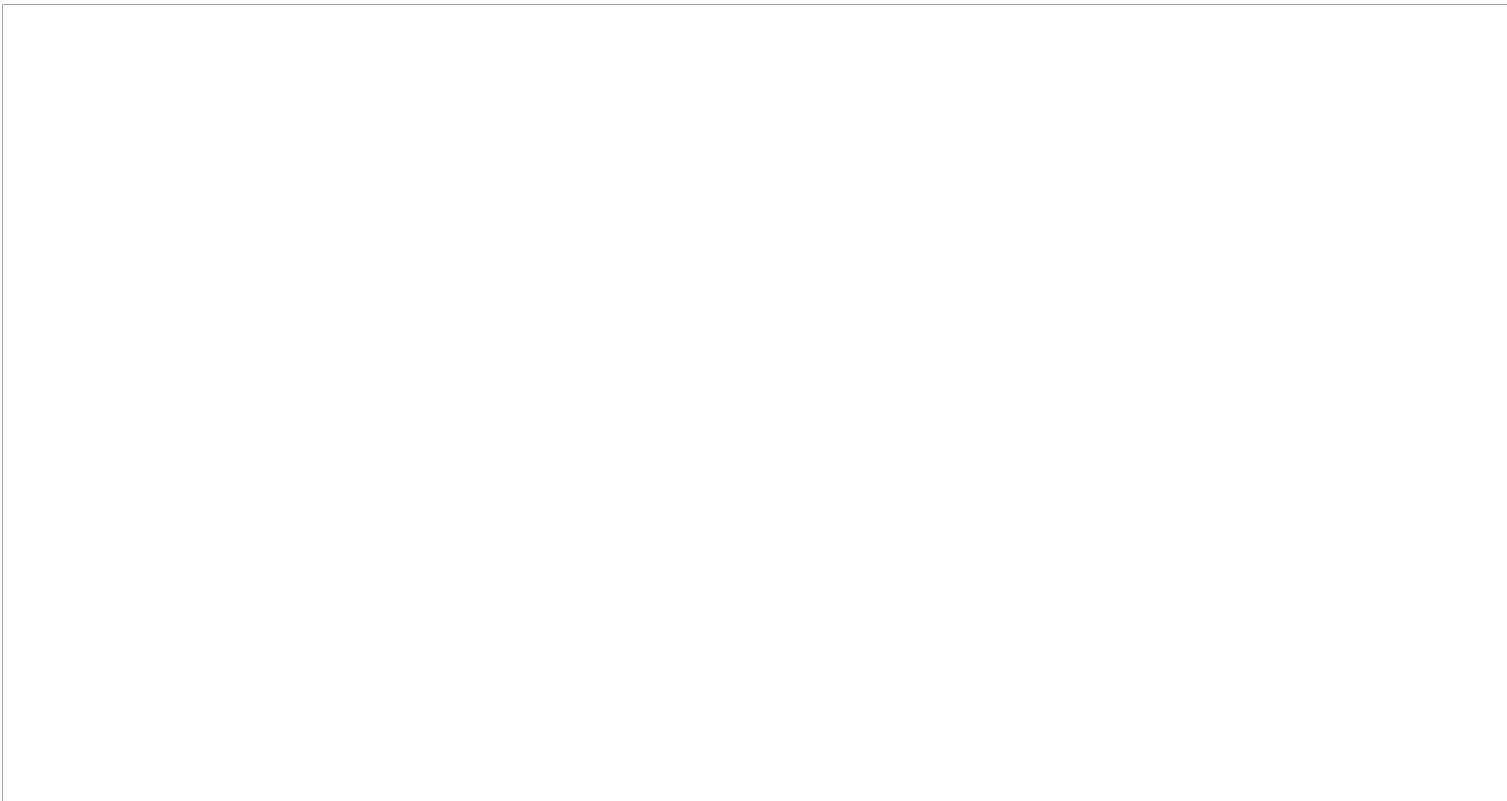
Top Secret

RCA-03/0001/82

25X1

Top Secret

25X1



25X1

2. (S/D) This report updates portions of NPIC report [redacted] and includes a location map, 92 annotated photographs, and 38 tables.

25X1

INTRODUCTION

3. (S/D) This report updates a previous NPIC report¹ and consolidates imagery-derived information obtained since March 1979 on 38 Soviet space tracking facilities (Figure 1). The report is presented in two parts—a summary of new antenna and antenna control building construction at Soviet space tracking facilities and a description of the tracking facilities in alphabetical sequence.

4. (S/D) Future NPIC reports on antennas at these individual facilities will reference the antenna numbering scheme presented in this report.

BASIC DESCRIPTION

Summary of New Construction

Control Buildings for 12-Meter-Diameter Antennas

5. (S/D) A new control building for 12-meter-diameter antennas has been identified at six Soviet space tracking facilities since March 1979 (Table 1). Two versions of the control building have been observed. One version is 94 by 14 meters and has two antenna positions (Figure 2). The other is 76 by 19 meters and has one antenna position (Figure 3).

6. (S/D) The concurrent construction of these control buildings at several space tracking facilities suggests that they may be intended for a future Soviet satellite system. This analysis is based on past observations at other Soviet space tracking facilities, where control buildings constructed concurrently at

**Table 1.
Soviet Facilities with Control Buildings for 12-Meter-Diameter Antennas Under Construction**

This table in its entirety is classified SECRET//WNINTEL

Name	No of Bldgs	Antenna Bldgs Not Present	First Observed Ucon	Complete	Dimensions (m)		Antenna Position Dimensions	Antennas Positions Mounted
					L	W		
Galenki ESV Trk/Molniya Fac	1				94	14	12 x 12	2 None
Leningrad Space Trk Fac	1				76	19	12 x 12	1 None
Pogranichnyy ESV Trk Molniya Fac	1				94	14	12 x 12	2 None
Vorkuta ESV Trk Fac	1				76	19	12 x 12	1 None
Yakutsk Space Trk Fac	1				76	19	12 x 12	1 None
Yeniseysk ESV Trk/Molniya Fac	1				94	14	12 x 12	2 None

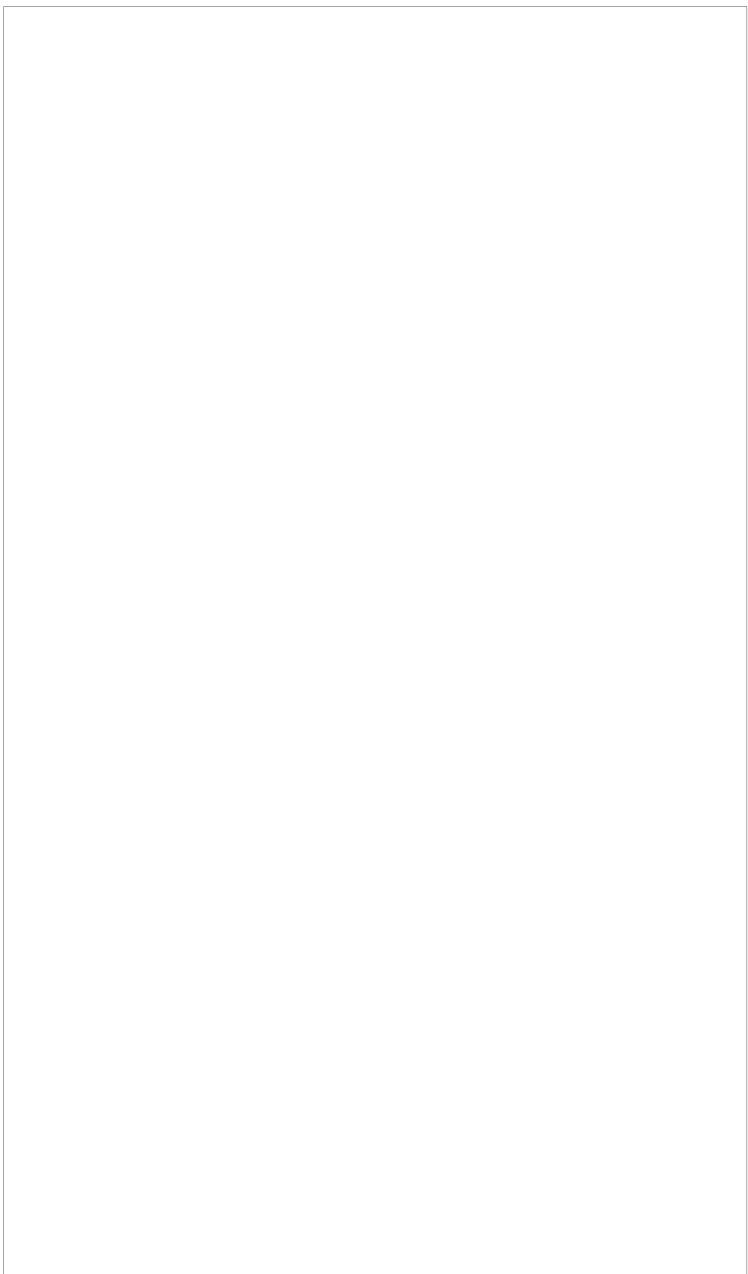
25X1

Top Secret

25X1

Top Secret [redacted]

25X1



25X1

several facilities were later identified as having a satellite command and control function. The close starting dates for the buildings, from April to October 1980, further support the analysis that they will be part of the same system.

25- by 18-Meter Control Buildings for [redacted] Antennas

25X1

7. (S/D) Since March 1979, five [redacted] antennas and one probable antenna have been mounted on 25- by 18-meter control buildings at six facilities. Construction also began on similar-sized control buildings (Figure 4) at two additional facilities. Eight Soviet tracking facilities now have this type of control building (Table 2).

25X1

Table 2.
Soviet Facilities with Two-Story, 25- by 18-Meter Control Buildings for [redacted] Antennas

25X1

This table in its entirety is classified SECRET//WNINTEL

Name	Antenna First Observed Mounted on Bldg	No of Antennas	First Observed on Roof	Radome No Complete	Antenna Control Bldg Not Present First Observed Ucon Complete				
Galenki ESV	—	0	—	0	[redacted]				
Trk/Molnlya Fac	[redacted]	1 prob	[redacted]	1					
Kamenets-Podolskiy Space Trk Fac									
Moscow/Shchelkovo ESV Trk Fac									
Sary-Shagan ESV									
Trk/Molnlya Fac									
Ulan-Ude ESV									
Trk Fac									
Yakutsk Space Trk Fac									
Yeniseysk ESV									
Trk/Molnlya Fac									
Yevpatonia Deep									
Space Trk Fac North									
						—	0	—	0

25X1

25X1

*An addition to the bldg has been constructed and a probable calibration antenna mounted on its roof. Therefore the antenna is similar to those mounted on the dual position 60- by 18-meter antenna control building (See Table 3).

Table 3.
Soviet Facilities with Dual-Position 60- by 18-Meter Control Buildings for [redacted] Antennas

25X1

This table in its entirety is classified SECRET//WNINTEL

Name	First Observed on Ground	Antenna First Observed Mounted	No Observed	Radome First Observed on Roof	No Complete	Not Present	Antenna Control Bldg First Observed Ucon Complete	Remarks
Galenki ESV Trk/Molnlya Fac			1		1			
Naryan-Mar Tel/Trk Fac			0		0			Poss dual-position antenna control bldg is ucon
Moscow/Shchelkovo ESV Trk Fac			2		2			2nd [redacted] antenna prob mounted on roof of control bldg by [redacted]
Sary-Shagan ESV Trk/Molnlya Fac			0		0			
Simferopol Space Flight Center			1		1			[redacted] antenna prob mounted on roof of control bldg by [redacted]
Tyuratam ESV Trk Fac			1		1			
Ulan-Ude ESV Trk Fac			1		1			
Yeniseysk ESV Trk/Molnlya Fac			0		0			

25X1

25X1

25X1

25X1

25X1

25X1

Table 4.
Soviet Facilities with QUAD LEAF Antennas

This table in its entirety is classified SECRET/WNINTEL

Name	Total Mounted	No Mounted Since	Antennas		Remarks
			No of Control Bldg Ucon	No with Single-element Cigar-Type Telemetry Antennas	
Barnaul Space Trk Fac	0	0	0	0	Antenna shipping crates observed by [redacted] however, no cons as yet on control bldg
Galenki ESV Trk/Molniya Fac	2	0	0	2	
Kamenets-Podolskiy Space Trk Fac	1	1	0	0	Control bldg 1st observed ucon on [redacted] antenna mounted on its control bldg by [redacted]
Kolpashevo ESV Trk Fac	1	0	0	1	
Leningrad Space Trk Fac	1	1	0	1	Control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Moscow/Shchelkovo ESV Trk Fac	1	0	0	1 poss	2nd antenna removed from its pedestal by [redacted] remained on ground
Plesetsk ESV Trk Fac	1	1	0	1	Control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Pogranichnyy ESV Trk/Molniya Fac	2	1	0	2	2nd control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Sary-Shagan ESV Trk/Molniya Fac	2	1	0	0	2nd control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Severodvinsk Satellite Communications Station**	1	0	0	1	
Tarusa Space Trk Fac	1	1	0	1	Control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted] new tracking fac
Tyuratam ESV Trk Fac	0	0	1	0	Control bldg ucon by [redacted]
Tyuratam ICBM Test Support Fac 7**	1	1	0	1	Control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Ulan-Ude ESV Trk Fac	2	0	0	2	
Vorkuta ESV Trk Fac	1	1	0	1	Control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Yakutsk Space Trk Fac	1	1	0	1	Control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Yeniseysk ESV Trk/Molniya Fac	2	1	0	2	2nd control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]
Yevpatoria Deep Space Trk Fac North	2	1	0	2	2nd control bldg ucon by [redacted] antenna mounted on its control bldg by [redacted]

* Imagery of insufficient quality to determine presence of single-element Cigar telemetry antenna.

** Principally missile-related tracking facility; not included in facility descriptions.

Top Secret

25X1

Dual-Position 60- by 18-Meter Control Building for
[] **Antenna**

25X1

8. (S/D) A new dual-position, 60- by 18-meter control building (Figure 5) has been under construction at one tracking facility, and three new [] antennas have been mounted at three other facilities since March 1979. Eight facilities (Table 3) now have these dual-position control buildings. At Moscow/Shchelkovo Earth Satellite Vehicle (ESV) Tracking Facility, a second radome was observed on the dual-position control building on [] This is the first dual-position control building to have an antenna mounted at each position.

25X1

25X1

QUAD LEAF Antenna

9. (S/D) Six new QUAD LEAF antenna control buildings were constructed, and 11 new QUAD LEAF antennas have been mounted on control buildings at 11 facilities since March 1979, including a new tracking facility south of Moscow (Table 4). There are now 16 known facilities with mounted QUAD LEAF antennas (a total of 22 antennas). Additionally, QUAD LEAF antenna shipping crates were observed at another tracking facility at which there was no control building. A single-element, Cigar-type telemetry antenna was identified for the first time mounted on the outer edge of most QUAD LEAF antennas (Figure 6).

64-Element Telemetry Antenna

10. (S/D) Five new 64-element telemetry antennas have been constructed at five facilities since March 1979 (Figure 7 and Table 5). There are now ten tracking facilities with 64-element telemetry antennas.

Table 5.
Soviet Facilities with 64-Element Telemetry Antennas

This table in its entirety is classified SECRET/WNINTEL

Name	No Mounted	No Ucon	Antennas Not Present	Construction First Observed	Observed Mounted
Barnaul Space Trk Fac	1	0	Apr 77	Jul 77	May 78
Kapustin Yar Tel/Trk Fac *	1	0	May 79	Aug 79	Jun 81
Khalmer-Yu Trk Fac *	1	0	Apr 75	Oct 75	Apr 77
Naryan-Mar Tel/Trk Fac	0	1	Jul 79	Mar 80	[]
Plesetsk ESV Trk Fac	1	0	Apr 79	May 79	[]
Severodvinsk Satellite Communications Sta *	1	0	Nov 78	Jan 79	Aug 79
Severomorsk Naval Msl Storage *	1	0	May 75	Sep 75	Feb 77
Tyuratam ESV Trk Fac	1	0	Feb 77	May 77	[]
Tyuratam ICBM Test Support Fac 3 *	1	0	Dec 76	May 77	Oct 78
Uka Hen Egg/Kamchatka Impact Trk Fac A *	1	0	Jul 77	Sep 77	Sep 78

25X1

25X1

* Principally missile-related tracking facility; not included in facility descriptions.

25X1

Top Secret

RCA-03/0001/82

25X1

Top Secret [redacted]

25X1

New Probable Interferometer

11. (S/D) Construction of a new probable BOW AND ARROW (VT-3) interferometer has been underway since March 1979, bringing the total of known VT-3 interferometers in the Soviet Union to seven.

Newly Identified Deep-Space Tracking Facility

12. (S/D) A deep-space tracking facility was identified during this period in the western USSR. It is one of only four facilities that contain or will contain (construction is underway) a 64 or 70 meter antenna.

Other New Antennas

13. (S/D) Other antennas introduced at various tracking facilities during the period are discussed under the individual facility descriptions.

[redacted] 25X1

[redacted] 25X1

Facility Description

Akstafa Space Tracking Facility

14. (S/D) The facility consists of an operations area, a support area, and a separately secured area of unknown function (Figure 8). The operations area contains a 25-meter-diameter antenna mounted on a 36- by 24- by 12-meter control building; one large, two-story operations building; a heating plant; and three support buildings. Significant activity during the reporting period included the mounting of the 25-meter-diameter antenna onto the roof of its control building on [redacted] and the installation of a PARK DRIVE satellite communications unit since [redacted]. 25X1

15. (S/D) The support area contains a large, rectangular, two-story barracks/administration building; 13 support buildings (two under construction); and one security building.

16. (S/D) The separately secured area of unknown function contains footings for a building, approximately 54 by 24 meters in size, and two support buildings.

Page Denied

Alushta Satellite Communications Station

17. (S/D) The station contains a 25-meter-diameter antenna mounted on a 19-meter-diameter control building (Figure 9), a security building, four sheds, and three prepared parking areas. No significant activity was observed at the facility during the reporting period.

Andreyevka Satellite Communications Station

18. (S/D) The station consists of an operations area and a support area (Figure 10). The operations area contains an antenna of unknown type or function, a PARK DRIVE satellite communications unit (Figure 11), and a 12-, a [redacted] a 32-, a 3-, and an 8-meter-diameter antenna. Additional structures include three antenna control buildings, a large operations building, four support buildings, a quonset hut, and a heating plant. Significant activity included the presence of the PARK DRIVE satellite communications unit since [redacted] and the mounting of a 3-meter-diameter antenna adjacent to the 12-meter-diameter antenna on [redacted]

25X1

25X1

25X1

19. (S/D) The support area contains three multistory barracks/administration buildings, a vehicle maintenance and storage building, a heating plant, a calibration tower, a security building, four storage buildings, and several sheds and support buildings. No significant activity was observed during the reporting period.

20. (S/D) The Andreyevka station, together with the Vicak Space Tracking Facility, has been reported to have a signal intelligence (sigint) role against free-world communications satellite systems.²

Ashkhabad ESV Tracking Facility

21. (S/D) The facility consists of an operations area and a support area (Figure 12).

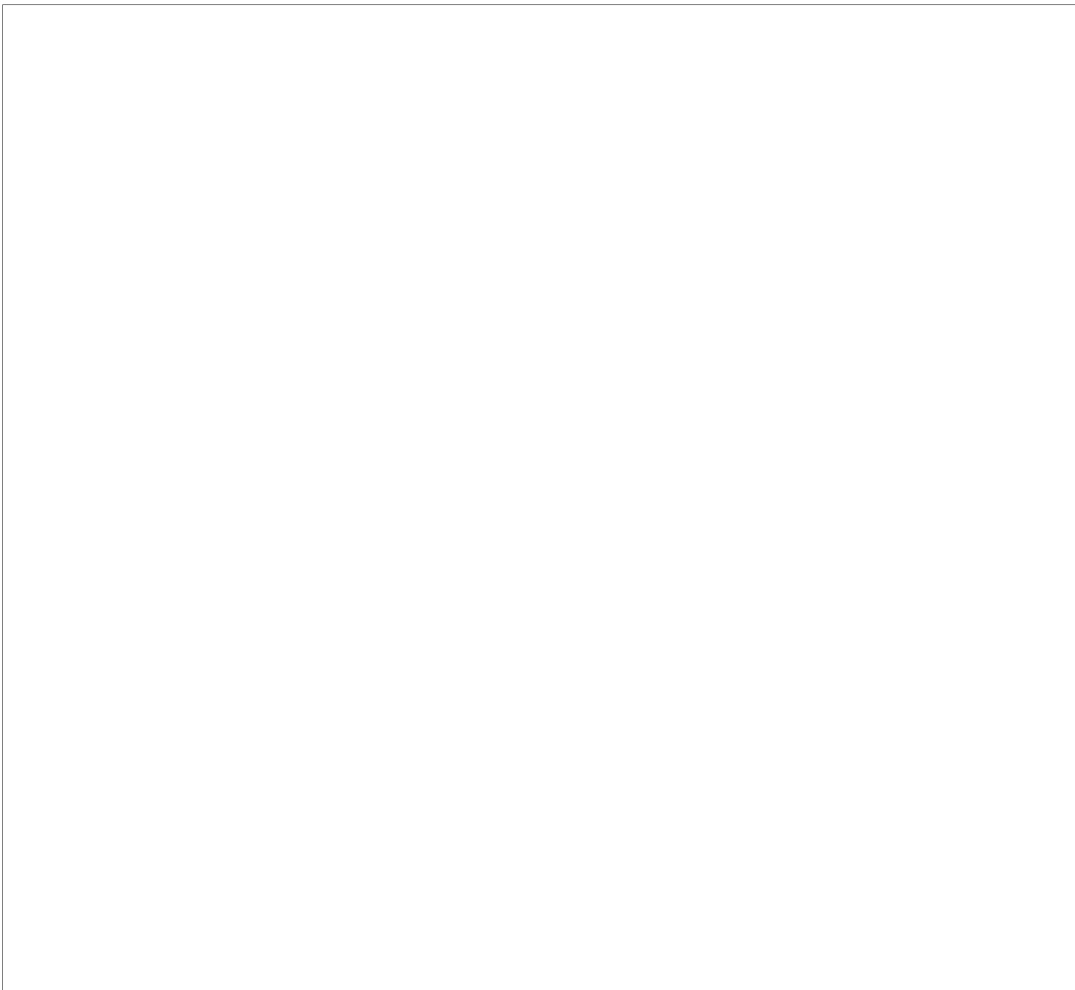
22. (S/D) The operations area contains a 15- and a [redacted] antenna, a 16-meter-diameter radome covering an antenna of unknown type and size, and two antenna sections, each 7 meters in diameter (Figure 13). Other structures include a large operations building and three support buildings.

25X1

23. (S/D) The support area contains four vehicle storage sheds, a heating plant, ten support buildings, and five sheds.

24. (S/D) No significant activity has been observed at the facility since the last report.

25X1



Barnaul Space Tracking Facility

25. (S/D) This facility consists of an operations area, an interferometer area, a high-frequency (HF) communications area, a support area, and a construction support area (Figure 14).

26. (S/D) The operations area (Figure 15 and Table 6) contains 15 antennas, three antenna control buildings, a possible calibration tower, two unoccupied antenna platforms, a heating plant, and seven support buildings. During the reporting period, a [redacted] antenna and a QUAD WEDGE antenna had been mounted by [redacted] and QUAD LEAF antenna shipping crates had been moved into the area by [redacted]. No evidence of construction of a control building for the QUAD LEAF antenna was observed. 25X1
25X1
25X1

27. (S/D) The interferometer area contains a probable BOW AND ARROW (VT-3) interferometer in an early stage of construction. The interferometer was not present on [redacted] however, by [redacted] initial grading of earth had begun. By [redacted] the interferometer consisted of an antenna control building in an early stage of construction, footings for seven antenna buildings, and a trench (Figure 16). 25X1
225X1

28. (S/D) The support area contains a possible calibration tower for the 64-element telemetry antenna (item 4, Table 6), three barracks/administration buildings, a vehicle storage building, an athletic field, an obstacle course, and two support buildings.

29. (S/D) The HF communications area contains three antennas. The construction support area appeared to be abandoned and contains five support buildings.



25X1

25X1

25X1

Table 6.
Barnaul Space Tracking Facility, USSR
(Items keyed to Figures 14 and 15)
This table and its entries are classified SECRET//NOFORN

Item #	Description	Socket Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Franchise antenna	802	21 300 25 8 43		25X1
2	Horizontal dipole antenna	100	25 27		
3	Franchise Franchise	802	21 300 25 8 43		
Operations Area					
4	Pole calibration tower				In support area for 64 element telemetry antenna
5	SKP WHEEL antenna				
6	SKP WHEEL antenna				
7	120-dipole ORBITA antenna				
8	Antenna platform				Unoccupied
9	Antenna platform				Mounted by 25X1
10	QUAD WEDGE antenna				1 single element & 3 2 element telemetry antennas mounted on roof
11	SW				
12	QUAD WEDGE antenna				
13	Antenna platform				Unoccupied
14	Antenna platform				
15	40 element telemetry antenna				
16	64 element telemetry antenna				
17	64 element telemetry antenna				

Top Secret

25X1

Galenki ESV Tracking/Molniya Facility

30. (S/D) The facility (Figure 17) consists of an operations area, a deep-space tracking area, an HF communications area, and a support area, which contains over 100 buildings/structures.

31. (S/D) The operations area contains 36 antennas, two control buildings under construction, a calibration tower, and two SA-2 launchers (Figure 18 and Table 7). Other structures include 18 antenna control buildings, 20 support buildings, and numerous sheds. Activity during the reporting period included completion of a control building for a [redacted] antenna, mounting of a [redacted] diameter antenna on a dual-position 60- by 20-meter control building, and initial construction of a 94- by 14-meter control building that will probably have two 12-meter-diameter antennas mounted on its roof. This control building or a modified version was under construction at five other Soviet space tracking facilities (Table 1).

32. (S/D) The deep-space tracking area (Figure 18) contains a control building in a midstage of construction for a 64- or 70-meter-diameter antenna, an operations building, a support building, and numerous antenna components.

33. (S/D) The HF communications area contains nine HF antennas, five HF antennas that are missing various masts, a horn parabolic radio relay antenna, two FORK REST antennas, and a tower of unknown function (Figure 19 and Table 8).

Galenki Space Tracking Facility North

34. (S/D) The facility (Figure 20) consists of a 25-meter-diameter antenna under construction, a 16-element telemetry antenna, six support buildings (two under construction), a security building, and three sheds. Significant activity since the last report included the construction of footings for two buildings.

**Table 7.
Operations Area of Galenki ESV Tracking/Molniya Facility, USSR
(Items keyed to Figure 18)**

This table in its entirety is classified TOP SECRET ZARK UMBRA

Item	Description	Remarks
1	8-m-diam antenna	
2	25-m-diam antenna	
3	32-m-diam antenna	
4	Calibration tower	
5	25- by 18-m control bldg	[redacted] antenna expected to be mounted on its roof; bldg upon since [redacted]
6	3-m-diam antenna	Radome covered
7	384-element telemetry antenna	
8	40-element telemetry antenna	
9	24-element telemetry antenna	
10	2 SA-2 launchers	Present at the fac since [redacted]; the reason for their presence is unk
11	QUAD LEAF antenna	
12	QUAD LEAF antenna	
13	[redacted] antenna	Mounted by [redacted] radome covered
14	Control bldg	Upon [redacted] 1 or 2 12-m-diam antennas expected to be mounted on its roof
15	8-m-diam antenna	
16	15-m-diam Molniya antenna	
17	8-m-diam antenna	Radome covered
18	SHIP WHEEL antenna	Radome covered
19	3-m-diam antenna	
20	4-element telemetry antenna	
21	8-m-diam antenna	Part of the type VI satellite command system
22	4-m-diam antenna	Radome covered; part of the type II satellite command system
23	4-m-diam antenna	Radome covered; part of the type III satellite command system
24	Control bldg	6 2-element Cigar antennas & 2 4-element telemetry antennas on its roof
25	5-element telemetry antenna mount	Removed
26	5-element telemetry antenna	
27	Control bldg	2 2-element Cigar & 1 2-element telemetry antenna on its roof
28	15-m-diam Molniya antenna	
29	SHIP WHEEL antenna	
30	4-element telemetry antenna	
31	8-m-diam antenna	Part of the type VI satellite command system

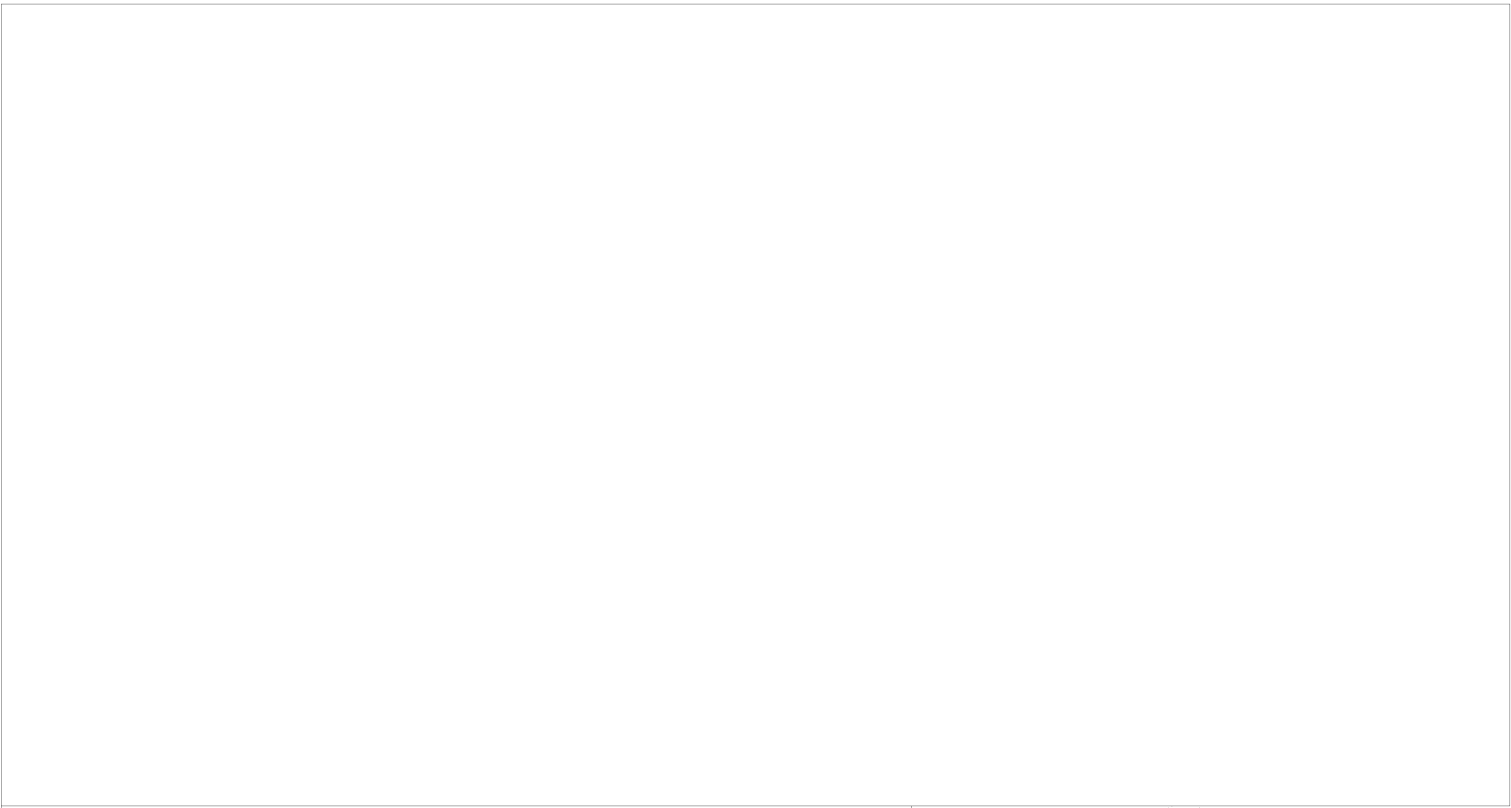
Top Secret

RCA-03/000725X1

Top Secret

25X1

25X1



25X1

25X1

25X1

25X1

25X1

Table 8.
HF Communications Area of Galenki ESV Tracking/Molniya Facility, USSR
 (Items keyed to Figure 19)
 This table in its entirety is classified SECRET/WINTEL

Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Fishbone	BS2 21 200 8 4.5	3.0-24.0		
2	Fishbone	3 BS2 21 200 8 4.5	3.0-24.0		

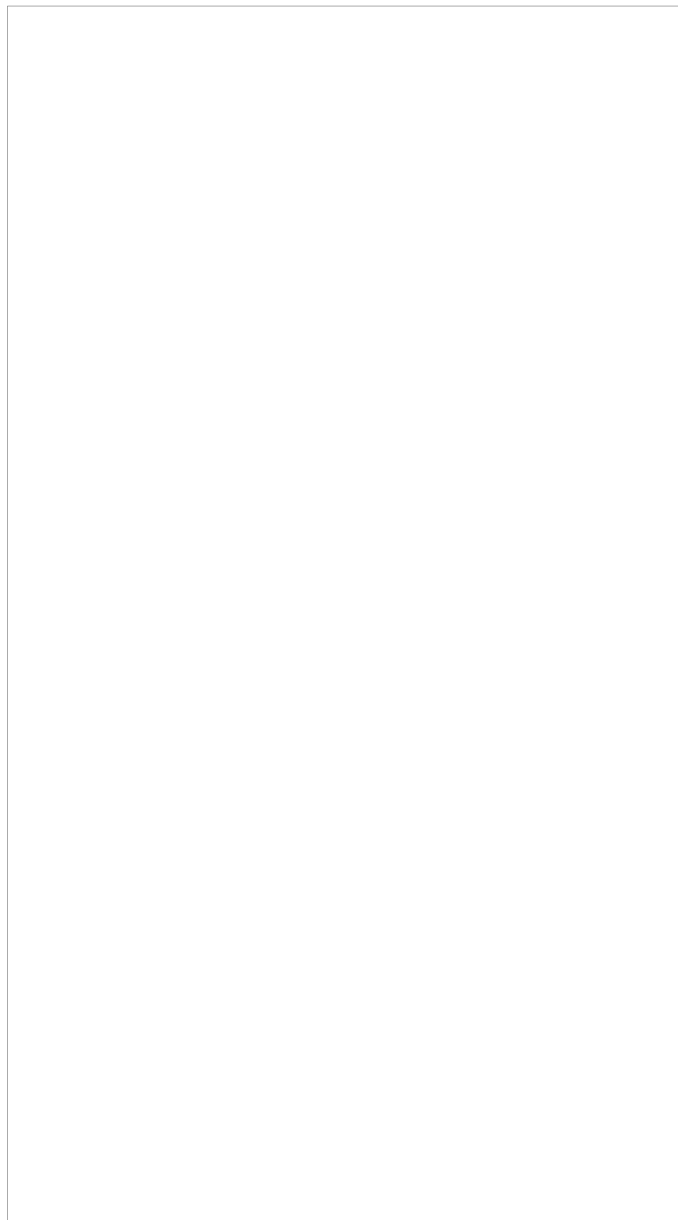
Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
3	Fishbone	2 BS2 21 200 8 4.5	3.0-24.0		
4	Fishbone	2 BS2 21 200 8 4.5	3.0-24.0		
5	Fishbone				Abandoned
6	Fishbone				Abandoned
7	Mast				Former horizontal dipole antenna; other mast removed
8	Mast				Former horizontal dipole antenna; other mast removed
9	Horn parabolic				
10	Horizontal dipole	VGD 20 14	3.75-9.38		
11	Fishbone	3 BS2 21 200 8 4.5	3.0-24.0		
12	Fishbone	BS2 21 200 8 4.5	3.0-24.0		
13	Fishbone				Abandoned
14	Horizontal dipole	VGD 15 14	5.0-12.5		
15	Horizontal dipole	VGD 24 25	3.13-7.81		
16	FORK REST				
17	FORK REST				
18	Tower				

Top Secret

Top Secret

25X1

25X1

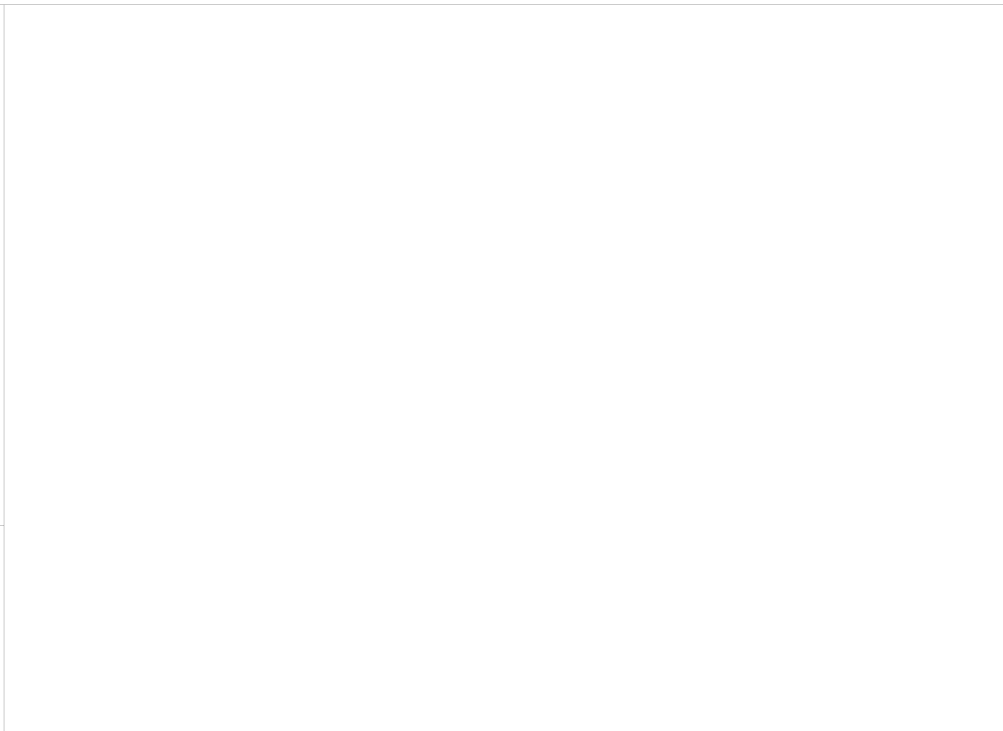
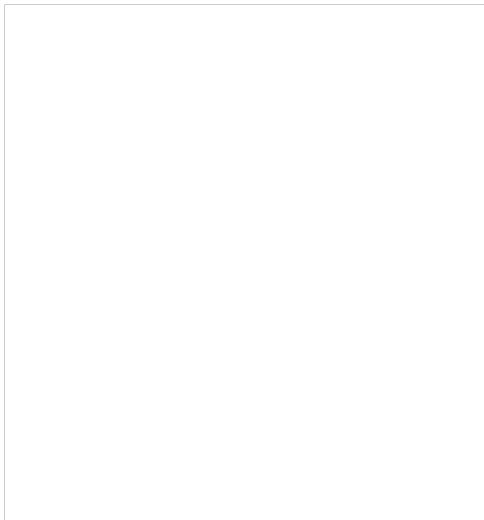


Kalyazin Deep Space Tracking Facility

35. (S/D) The facility (Figure 21) was newly identified during this period. It was first observed under construction in September 1976 and consists of a 38-meter-diameter control building for either a 64- or 70-meter-diameter antenna (Figure 22), a heating plant, a security building, and four support buildings. Based on the rate of construction observed at other Soviet facilities where large antennas were constructed, the antenna at this facility could be completed by late 1982.

Kamenets-Podolskiy Space Tracking Facility

36. (S/D) The facility has been constructed in and around an abandoned medium-range ballistic missile launch complex and consists of an operations area and a support area (Figure 23).



37. (TSZU) [redacted] The operations area contains type VIII and IX satellite command systems which provide operational support for three satellite systems—Molniya II and Molniya III communications satellites and second-generation naval support satellites (NAVSTAR). The type VIII and IX systems use the same radome-covered, 3- and 8-meter-diameter antennas; 3-meter-diameter antennas; and 12-meter-diameter antennas. Additional antennas include a QUAD LEAF antenna; a radome-covered, probable [redacted] meter-diameter antenna; a calibration tower; and an operations building (Figure 24).

38. (S/D) Significant activity at the operations area since the last report included the completion of a calibration tower by [redacted] and the mounting of a QUAD LEAF antenna, an 8-meter-diameter antenna, three 3-meter-diameter antennas, and a probable [redacted] antenna by [redacted].

39. (S/D) The support area contains over 50 support buildings and one single-element and two two-element Cigar telemetry antennas mounted on the roof of a control building. Significant construction since the last report included the completion of a large, three-story building; a heating plant; a two-unit, forced-draft cooling system; and two support buildings.

Kirzhach Dual Rate Facility

40. (TSZU) [redacted] The facility contains an operations area and a support area (Figure 25). The mission of the facility is to support programs which use the type VII satellite command system.¹

Top Secret

25X1

25X1

41. (S/D) The operations area contains two VT-5 interferometers that intersect each other, an antenna mounted on the roof of an isolated control building, and ten support buildings. Each of the interferometers has a control building at the intersections of the baselines and buildings at the terminus of each baseline. All ten control buildings plus the isolated control building have a roof-mounted, 19-meter-diameter radome that covers a parabolic dish about 7 meters in diameter.

42. (S/D) During the reporting period, five smooth radomes had been replaced with geodesic radomes by July 1980. This brings the total number of mounted geodesic radomes to ten, with only the isolated control building having a mounted, smooth radome.

Kirzhach Space Tracking Facility

43. (S/D) The facility contains a space tracking area and an interferometer area (Figure 26).

44. (S/D) The space tracking area contains a C-shaped operations building, a 19-meter-diameter radome covering an antenna of unknown size and type, two horizontal dipole antennas, four telemetry antennas, and five sheds (Figure 27 and Table 9).

45. (S/D) The interferometer area contains two VT-2B interferometers and two support buildings.

46. (TSZU) [] The mission of the facility is the tracking and monitoring of antisatellite (ASAT) satellites and related payloads. No significant activity was observed at the facility during the reporting period.

Kolpashevo ESV Tracking Facility

47. (S/D) The facility contains an HF communications area, an operations area, and a support area (Figure 28). No significant activity was observed at the facility during the reporting period.

48. (S/D) The HF communications area contains ten HF antennas and two masts (Figure 29 and Table 10).

49. (S/D) The operations area (Figure 30 and Table 10) contains 29 antennas, three masts, ten antenna control buildings, and ten support buildings.

50. (TSZU) [] The support area contains a type 1 satellite command system at each of ten support buildings. (Continued p. 21)

Kolpashevo ESV Tracking Radio Communications Transmitter Station

51. (S/D) The facility (Figure 31 and Table 11) contains eight HF antennas, two telemetry antennas, one antenna control building, and 12 support buildings. No significant activity was observed at the facility during the reporting period.

Komsomolsk Satellite Communications Station NW

52. (S/D) The facility consists of an operations area and a support area (Figure 32).

53. (TSZU) [] The operations area (Figure 33) contains two 12-meter-diameter ORBITA antennas, a control building, three support buildings, six type VIII and IX satellite command systems under construction. The type VIII and IX systems normally use two 12-meter-diameter antennas that are mounted on the roofs of separate buildings; six 3-meter-diameter antennas (two radome covered); and two radome-covered, 8-meter-diameter antennas that are mounted on the roofs of separate buildings. However, Komsomolsk does not have control buildings for two 8-meter-diameter antennas.

(Continued p. 21)

Table 9.
Kirzhach Space Tracking Facility, USSR
(Items keyed to Figure 27)

This table is to be entered or classified SECRET/NOFORN.

Item	Description	Serial Designator	Frequency (MHz)	Azimuth (Deg)	Remarks
1	Horizontal dipole antenna	VGD 25	3 13-7.81		
2	Horizontal dipole antenna	VGD 25	3 0-12.5		
3	18-meter radome	12			Covering an antenna of unknown size
4	SHIP WHEEL antenna				
5	SHIP WHEEL antenna				
6	2-element telemetry antenna				
7	2-element telemetry antenna				

25X1

Sanitized Copy Approved for Release 2010/02/26 : CIA-RDP82T00709R000100070001-9

Page Denied

25X1

25X1

Table 10.
Kolpashevo ESV Tracking Facility, USSR
(Items keyed to Figures 29 and 30)

This table in its entirety is classified SECRET/NNINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
HF Communications Area (Figure 29)					
1	Single rhombic antenna	Undet	Undet	[Redacted]	
2	Single rhombic antenna	Undet	Undet		
3	Single rhombic antenna	Undet	Undet		
4	Single rhombic antenna	Undet	Undet		
5	Single rhombic antenna	Undet	Undet		
6	Single rhombic antenna	Undet	Undet		
7	Single rhombic antenna	Undet	Undet		
8	Fishbone (2-2-2) antenna	BSZ 21 200 25 8 4.5	3.0-24.0		
9	Fishbone (2-2-2) antenna	BSZ 13 200 11 8 4.5.3	3.0-24.0		
10	Mast				
11	Mast				
12	Horizontal dipole antenna	VGD 30 23	2.5-6.25		
Operations Area (Figure 30)					
13	8-m-diam antenna				Part of the type VI satellite command system
14	24-element telemetry antenna				
15	40-element telemetry antenna				
16	Fishbone (2-2-2) antenna	BSZ 21 200 25 8 4.5	3.0-24.0	[Redacted]	
17	QUAD LEAF antenna				
18	Control bldg				6 antennas of unk type mounted on roof
19	Mast				
20	Mast				
21	Mast				
22	Control bldg				2 2-element Cigar telemetry antennas mounted on its roof
23	4-element telemetry antenna				Mounted on roof of bldg
24	8-m-diam antenna				Part of the type VI satellite command system
25	5-element telemetry antenna				
26	Control bldg				4 2-element Cigar telemetry antennas & 2 single-element telemetry antennas mounted on roof
27	5-element telemetry antenna				
28	Horizontal dipole antenna	VGD 8 13	9.38-23.44	[Redacted]	
29	4-m-diam antenna				Radome covered; part of the type III satellite command system
30	SHIP WHEEL antenna				
31	SHIP WHEEL antenna				
32	4-element telemetry antenna				
33	5-m-diam antenna				Radome covered; part of the type II satellite command system

25X1

25X1

25X1

25X1

Page Denied

Table 11.
Kolpashevo ESV Tracking Radio Communications Transmitter Station, USSR
(Items keyed to Figure 31)

The table in its entirety is classified SECRET//NOFORN

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Horizontal dipole antenna	VGD 20	3.75-9.38	[REDACTED]	
2	Horizontal dipole antenna	VGD 20	3.75-9.38		
3	Horizontal dipole antenna	VGD 20	9.38-23.44		
4	Horizontal dipole antenna	VGD 24	3.13-7.81		
5	Double rhombic antenna	RGD 65 1	6.85-14.28		
6	Double rhombic antenna	RGD 65 1	13.71-28.57		
7	24-element telemetry antenna				
8	48-element telemetry antenna				
9	Double rhombic antenna	RGD 65 1	13.71-28.57		
10	Double rhombic antenna	RGD 65 1	6.85-14.28		
11	2 SA-2 launchers				

25X1

25X1

25X1

25X1

25X1

54. (S/D) Significant observations during the reporting period included the construction of a 12-meter diameter antenna on the ground adjacent to the western antenna control building (not shown on graphic) by [redacted] 12-meter-diameter antenna components adjacent to the eastern antenna control building (not shown on graphic) on [redacted] and early stages of construction of a building calibration tower.

55. (S/D) The support area contains 30 support buildings, seven of which were either under construction or completed during the reporting period.

Leningrad Space Tracking Facility

56. (S/D) The facility consists of operations area A, another operations area, an HF communications area, and a support area (Figure 34).

Top Secret

25X1

25X1

25X1

25X1

Table 12.
Southern Portion of Operations Area at Leningrad Space Tracking Facility, USSR
(Items keyed to Figure 35)

This table in its entirety is classified TOP SECRET

Item	Description	Remarks
1	8-m-diam antenna	Radome covered; assoc with the Type VIII & IX satellite command systems
2	8-m-diam antenna	Radome covered; assoc with the Type VIII & IX satellite command systems
3	3-m-diam antenna	Radome covered; assoc with the Type VIII & IX satellite command systems
4	3-m-diam antenna	Radome covered; assoc with the Type VIII & IX satellite command systems
5	3-m-diam antenna	Radome covered; assoc with the Type VIII & IX satellite command systems
6	12-m-diam antenna	Assoc with the type VIII & IX satellite command systems
7	3-m-diam antenna	Assoc with the type VIII & IX satellite command systems
8	3-m-diam antenna	Assoc with the type VIII & IX satellite command systems
9	3-m-diam antenna	Assoc with the type VIII & IX satellite command systems
10	12-m-diam antenna	Assoc with the type VIII & IX satellite command systems
11	76- by 19-m control bldg	For an expected 12-m-diam antenna

Table 13.
Northern Portion of Operations Area at Leningrad Space Tracking Facility, USSR
(Items keyed to Figure 36)

This table in its entirety is classified TOP SECRET

Item	Description	Remarks
1	Optical tracking position	
2	Optical tracking control bldg	
3	Prob optical tracking assoc bldg	
4	Optical tracking position	
5	4-m-diam antenna	Radome covered; used with type II satellite command system
6	SHIP WHEEL antenna	
7	SHIP WHEEL antenna	
8	4-element telemetry antenna	
9	Calibration tower	
10	24-element telemetry antenna	
11	40-element telemetry antenna	
12	384-element telemetry antenna	
13	15-element telemetry antenna	
14	Control bldg	Former position 4 2-element Cigar telemetry & 1 2000 single-element telemetry antennas on its roof
15	5-element telemetry antenna	Former position
16	QUAD LEAF antenna	
17	Admin/Engineering bldg	128 by 19 m
18	Calibration tower	

57. (TSZU, [redacted]) The operations area contains a southern and northern portion. The southern portion contains type VIII and IX satellite command systems, a calibration tower, a 76- by 19-meter control building probably for a 12-meter-diameter antenna, and an excavation for a building of unknown function and size (Figure 35 and Table 12).

58. (S/O) The 76- by 19-meter control building was observed under construction on [redacted]. A similar building or a modified version was under construction at five other Soviet space tracking facilities (Table 1).

59. (TSZU, [redacted]) The northern portion of the operations area contains two optical tracking positions, an optical tracking control building, a probable optical tracking-associated building, a type II satellite command system, 12 antennas, six antenna control buildings, a calibration tower, two abandoned antenna positions, a large administration/engineering building, and 11 support buildings (Figure 36 and Table 13). Significant activity during the reporting period included the completion of a large administration/engineering building in late 1980; the mounting of a QUAD LEAF antenna by [redacted] and the start of construction of four optical tracking-associated structures by [redacted].

Top Secret

25X1

25X1

60. (S/D) The HF communications area contains a control building, 11 HF antennas, two radio relay antennas, and two masts (Figure 37 and Table 14). No significant activity has been observed since the last report.

61. (S/D) The other operations area (Figure 38), operations area A, is about 0.5 nautical miles east of the HF communications area and contains a 24- and a 40-element telemetry antenna, two SA-2 launchers, a control building, and two support buildings. No significant activity was observed during the reporting period.

62. (S/D) The support area contains 30 buildings. No significant activity was observed during the reporting period.

Moscow/Shchelkovo ESV Tracking Facility

63. (S/D) The facility consists of an operations area and a support area (Figure 39).

64. (S/D) The operations area contains 42 antennas, 20 antenna control buildings, two optical tracking positions under construction, eight calibration towers, one radio relay antenna, and 20 support buildings (Figure 40 and Table 15).

65. (S/D) Significant activity during the reporting period included the mounting of a [redacted] diameter antenna (item 13, Figure 40) on the roof of its control building; the placing of a second radome on the dual-position [redacted] antenna control building (not shown on graphic); the construction of an optical tracking system consisting of two optical tracking positions (items 8 and 9) and two optical tracking-associated buildings; the removal of a QUAD LEAF antenna (item 1) from its pedestal by [redacted] and its placement on the ground adjacent to the unoccupied pedestal; and four 40-element telemetry antennas assembled but not mounted by [redacted] (not shown on graphic). By [redacted] two 40-element telemetry antennas in the northwestern portion of the facility had been mounted on their pedestals. The third antenna in the southeastern portion of the facility had been mounted by [redacted] and the fourth was on the ground adjacent to its pedestal. Four new 40-element telemetry antennas have also been mounted at Vorkuta ESV Tracking Facility.

66. (S/D) The support area contains 50 support buildings. No significant activity was observed during the reporting period.

Table 14.
HF Communications Area at Leningrad Space Tracking Facility, USSR
(Items keyed to Figure 37)

This table in its entirety is classified SECRET//SI//NF//NFTEL

Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)
1	Quadrant	UGD 32 25	3.03-8.70	
2	Quadrant	UGD 32 25	3.03-8.70	
3	Quadrant	UGD 32 25	3.03-8.70	
4	Fishbone	B52 21 200 8 4 B	17 3.0-24.0	
5	Fishbone	B52 21 200 8 4 B	17 3.0-24.0	
6	Horizontal dipole	VGD 24 26	3.13-7.81	
7	Quadrant	UGD 32 25	3.03-8.70	
8	Quadrant	UGD 12 17	8.08-17.88	
9	Quadrant	UGD 12 17	8.08-17.88	
10	Quadrant	UGD 12 17	8.08-17.88	
11	Horizontal dipole	VGD 24 26	3.13-7.81	
12	2 ROUND PLATE			
13	Mast			
14	Mast			

25X1

25X1

25X1

25X1

25X1

25X1

Top Secret

25X1

25X1

Table 15.
Moscow/Shchelkovo ESV Tracking Facility, USSR
(Items keyed to Figure 40)

This table in its entirety is classified TOP SECRET

Item	Description	Remarks
1	QUAD LEAF antenna	Removed from its pedestal since [redacted]
2	384-element telemetry antenna	[redacted]
3	Antenna control bldg	With 2 4-element & 5 prob 2-element telemetry antennas on its roof
4	[redacted] antenna	[redacted]
5	QUAD WEDGE antenna	[redacted]
6	8-element telemetry antenna	[redacted]
7	QUAD LEAF antenna	[redacted]
8	Optical tracking position	[redacted]
9	Optical tracking position	[redacted]
10	15-m-diam radome	Covering an antenna of unk size & type
11	SHIP WHEEL antenna	[redacted]
12	SHIP WHEEL antenna	[redacted]
13	[redacted] antenna	Radome covered
14	4-m-diam antenna	Radome covered; assoc with the type II satellite command system
15	4-m-diam antenna	Radome covered; assoc with the type III satellite command system
16	15-m-diam radome	Covering an antenna of unk size & type
17	15-m-diam radome	Covering an antenna of unk size & type
18	8-m-diam antenna	Assoc with the type VI satellite command system
19	8-m-diam antenna	Assoc with the type VI satellite command system
20	[redacted] antenna	Radome covered; 2nd radome-covered antenna was in place by [redacted]
21	12-m-diam DRBITA antenna	[redacted]
22	12-m-diam DRBITA antenna	[redacted]
23	6-element telemetry antenna	[redacted]
24	15-m-diam Molniya antenna	[redacted]
25	8-m-diam antenna	[redacted]
26	15-m-diam Molniya antenna	[redacted]
27	8-m-diam antenna	Radome covered
28	8-m-diam antenna	[redacted]
29	3-m-diam antenna	Radome covered
30	25-m-diam antenna	[redacted]
31	[redacted] antenna	[redacted]
32	Horn parabolic radia antenna	Oriented 270 deg
33	40-element telemetry antenna	Not on graphic; mounted by [redacted]
34	40-element telemetry antenna	Not on graphic; mounted by [redacted]
35	40-element telemetry antenna	Not on graphic; on ground adjacent to its pedestal by [redacted]
36	40-element telemetry antenna	Not on graphic; mounted by [redacted]

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

Moscow/Suponino Space Tracking Facility

67. (S/D) The facility contains an operations area and a support area (Figure 41).

68. (S/D) The operations area (Figure 42 and Table 16) contains nine antennas, an interferometer, a probable 32-meter-diameter antenna in a late stage of construction, five antenna control buildings, and five support buildings. Significant activity during the reporting period included removal of the subreflector from the 64-meter-diameter antenna by [redacted] and its subsequent remounting by [redacted] construction of a radio relay antenna; and start of construction of a support building.

69. (S/D) The support area contains 20 support buildings. No significant activity was observed.

Top Secret

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

Table 16.
Moscow/Suponino Space Tracking Facility, USSR
(Items keyed to Figure 42)

This table in its entirety is classified SECRET//WNINTEL

Item	Description	Remarks
1	Radar antenna	On an azimuth of <input type="text"/>
2	7-m-diam MARS mobile communications satellite antenna	
3	12-m-diam antenna	
4	7-m-diam prototype MARS mobile communications satellite antenna	
5	12-m-diam antenna	
6	12-m-diam antenna	
7	Triangular interferometer	With six <input type="text"/> antennas
8	Control bldg	Used for a prob 32-m-diam antenna
9	4-m-diam antenna	
10	25-m-diam antenna	
11	64-m-diam deep-space tracking antenna	

Moskva E-21 Satellite Control Facility

70. (S/D) The facility contains four radome-covered, 25-meter-diameter antennas; a 138- by 49-meter control building with two unoccupied antenna pedestals on its roof; an electric power transformer yard; a control bunker; four antenna control buildings; ten support buildings; and an area where cooling buildings were under construction (Figures 43 and 44).

71. (S/D) Significant activity during the reporting period included the completion of the 138- by 49-meter control building; construction of two pedestals on the roof of this control building for probable 25- or 32-meter-diameter antennas; the completion of two support buildings, with a third in an early stage of construction; and the start of construction of cooling buildings for the 138- by 49-meter control building.

72. (TSZU [redacted]) The facility is part of the type X satellite command system that controls the Soviets' launch detection satellites.

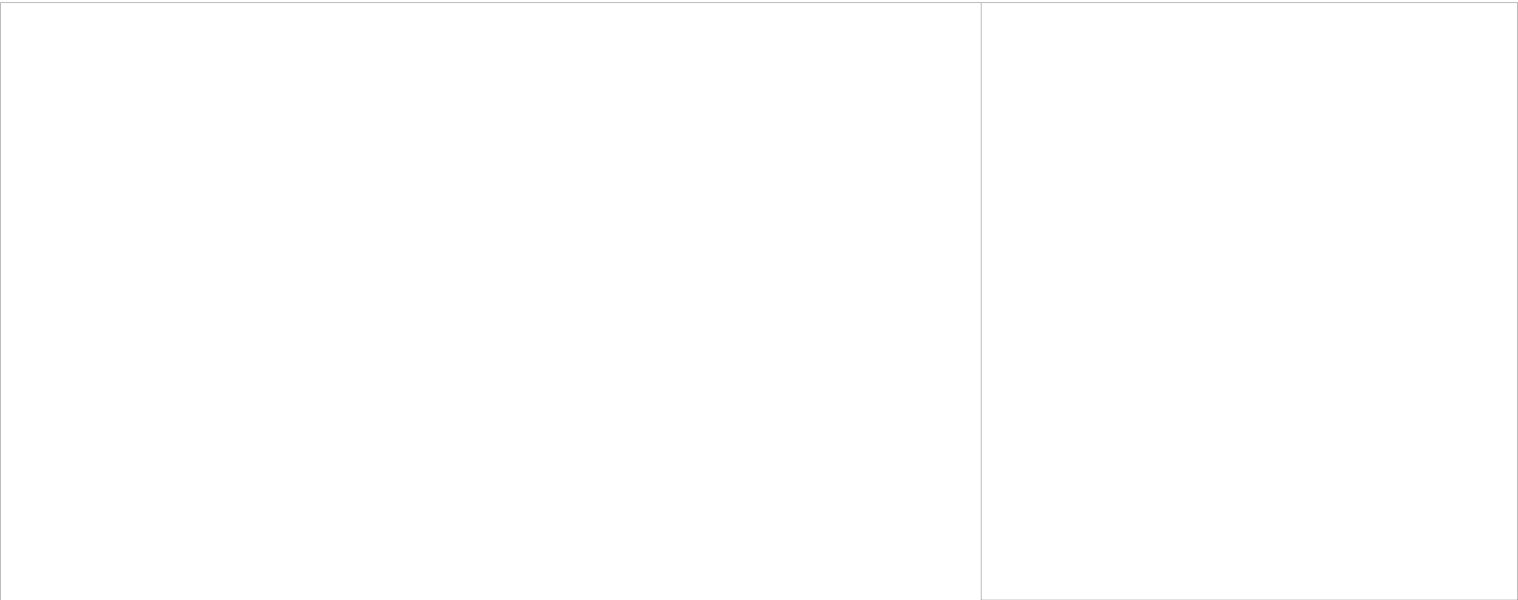
Naryan-Mar Telemetry/Tracking Facility

73. (S/D) The facility consists of an operations area and a support area (Figure 45).

74. (S/D) The operations area contains 16 telemetry antennas, two HF communications antennas, a 64-element telemetry antenna, two antenna control buildings (Figure 46 and Table 17), and footings for a possible dual-position control building. Significant activity during the reporting period was the mounting of a 64-element telemetry antenna (not shown on graphic) on [redacted] and construction of a possible dual-position control building begun by [redacted]

Top Secret

25X1



25X1

Table 17.
Naryn-Mar Telemetry/Tracking Facility, USSR
(Items keyed to Figure 46)

This table in its entirety is classified SECRET//NWINTTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Antenna control bldg				With 1 4-element telemetry antenna & 1 SHIP WHEEL antenna mounted on roof
2	Horizontal dipole antenna	VGD 15	5.0-12.5	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>	
3	Horizontal dipole antenna	VGD 20	2.5-6.25		
		28			
4	5-element telemetry antenna				
5	4-element telemetry antenna				
6	5-element telemetry antenna				
7	Single-element telemetry antenna				
8	Single-element telemetry antenna				
9	5-element telemetry antenna				
10	Antenna control bldg				With 8 2-element telemetry antennas on roof
11	D-band antenna				3 m in diam
12	D-band antenna				3 m in diam
13	04-element telemetry antenna cranes & components				Antenna mounted by

25X1

25X1

Top Secret

Top Secret

25X1

25X1

25X1

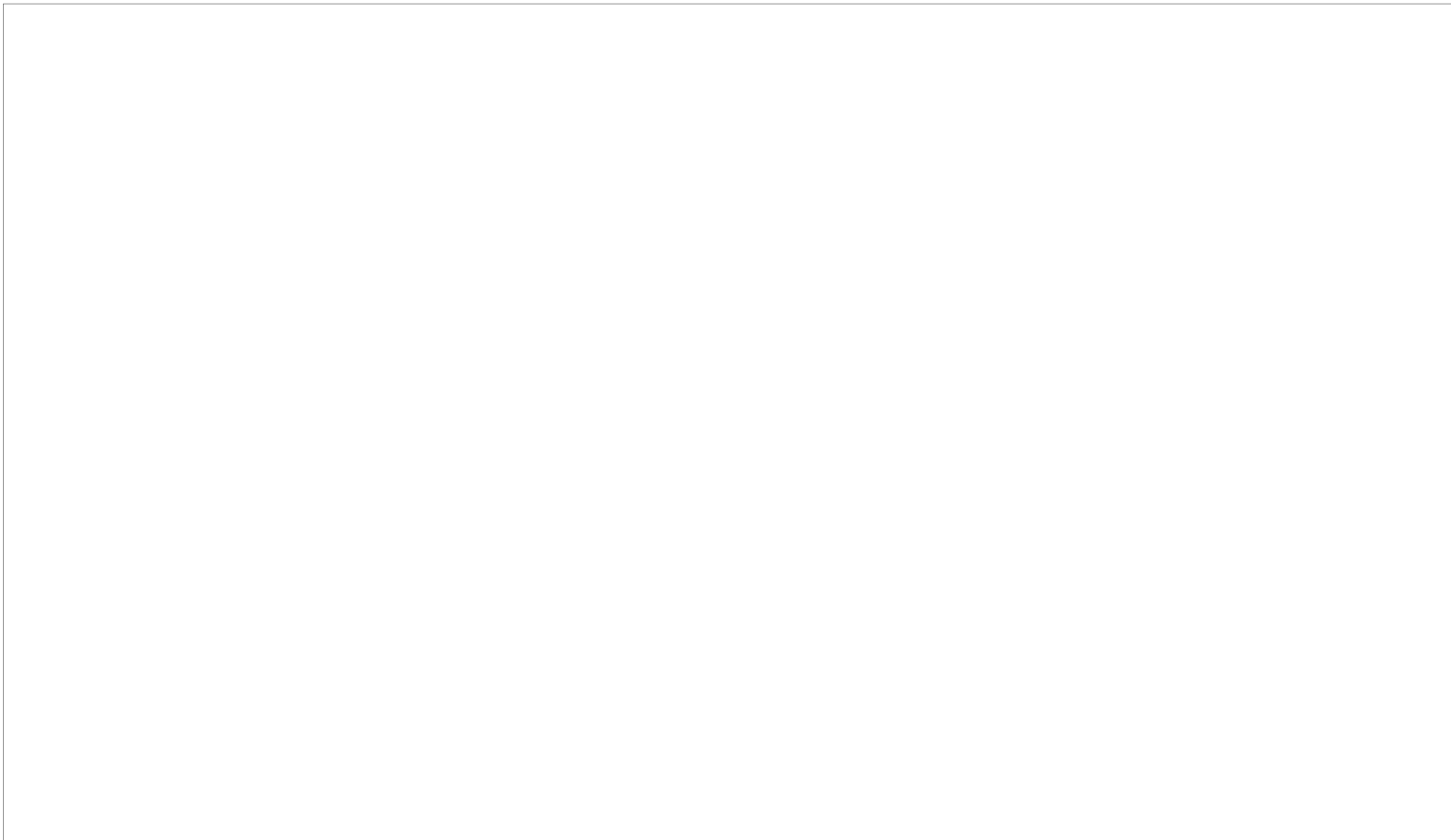
25X1

Table 18.
Norilsk Telemetry Tracking Facility, USSR
(Items keyed to Figure 47)

This table in its entirety is classified SECRET//NW//INTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Fluorbone antenna	BS 21 200 17 8 4.5	3.0 - 24.0		
2	END TRAY antenna				
3	Horizontal dipole antenna	VDD 15 28	5.0 - 12.5		
4	Horizontal dipole antenna	VDD 8 17	9.38-23.44		
5	Antenna platform				Unoccupied
6	2-element Cigar telemetry antenna				
7	D-band antenna				3 m in diam
8	D-band antenna				3 m in diam
9	D-band antenna				3 m in diam
10	D-band antenna				3 m in diam
11	Antenna platform				Unoccupied
12	Antenna platform				Unoccupied
13	2-element Cigar telemetry antenna				
14	2-element Cigar telemetry antenna				
15	1.5-m-diam antenna				
16	1.5-m-diam antenna				
17	1.5-m-diam antenna				

Top Secret



25X1

Norilsk Telemetry Tracking Facility

75. (S/D) The facility (Figure 47 and Table 18) consists of 11 telemetry antennas, three HF communications antennas, three unoccupied antenna positions, two antenna control buildings, and 13 support buildings. No significant activity was observed during the reporting period.

Plesetsk ESV Tracking Facility

76. (S/D) The facility consists of an operations area and a support area (Figure 48 and Table 19).

77. (S/D) The operations area contains 22 antennas, three calibration towers, two lightning arresters, four antenna control buildings, and three support buildings. Significant activity during the reporting period included the mounting of a 64-element telemetry antenna (item 1, Table 19) by [redacted] the mounting of a 12-meter-diameter antenna (not shown on graphic) by [redacted] and the mounting of a QUAD LEAF antenna by [redacted]

78. (S/D) The support area contains 14 support buildings and two underground fuel tanks. No significant activity was observed during the reporting period.

Pogranichnyy ESV Tracking Molniya Facility

79. (S/D) The facility (Figure 49) consists of three operations areas; two HF communications areas; and a support area, which contains over 100 support buildings.

80. (S/D) Operations area A (Figure 50 and Table 20) contains ten antennas, 12-meter-diameter antenna components, six antenna control buildings, and 15 support buildings. During the reporting period, a QUAD LEAF antenna had been mounted by [redacted] and a 94- by 14-meter control building was completed. This building will probably have 12-meter-diameter antennas mounted on its roof. Additionally, this type of control building or a modified version was under construction at five other Soviet space tracking facilities (Table 1).

(Continued p. 33)

Table 19.
Plesetsk ESV Tracking Facility, USSR
(Items keyed to Figure 48)

This table in its entirety is classified TOP SECRET [redacted]

25X1

Item	Description	Remarks
1	64-element telemetry antenna	Mounted by [redacted]
2	D-band antenna	3 m in diam
3	4-element telemetry antenna	Tower mounted
4	Antenna control bldg	With 1 5-element & 2 2-element Cigar telemetry antennas mounted on its roof
5	5-element telemetry antenna	Tower mounted
6	5-element telemetry antenna	
7	5-element telemetry antenna	
8	Telemetry antenna	Unk type
9	QUAD WEDGE antenna	
10	[redacted] antenna	
11	Control bldg	For 12-m-diam antenna; antenna mounted by [redacted]
12	[redacted] antenna	
13	QUAD WEDGE antenna	
14	QUAD LEAF antenna	Mounted by [redacted]
15	[redacted] antenna	Radome covered
16	4-m-diam antenna	Radome covered; part of type III satellite command system
17	4-element telemetry antenna	
18	SHIP WHEEL antenna	
19	4-m-diam antenna	Radome covered; part of type III satellite command system
20	Antenna components	For 12-m-diam antenna

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

Page Denied

Top Secret

25X1

25X1
25X1

Table 20.
Operations Area A of Pogranichnyy ESV
Tracking Molniya Facility, USSR
(Items keyed to Figure 50)

This table in its entirety is classified SECRET//WNINTEL

Item	Description	Remarks
1	15-m-diam Molniya antenna	
2	8-m-diam antenna	Radome covered
3	12-m-diam antenna components	Antenna expected to be mounted on roof of item 9
4	8-m-diam antenna	
5	15-m-diam Molniya antenna	
6	384-element telemetry antenna	
7	QUAD LEAF antenna	
8	QUAD LEAF antenna	Mounted by <input type="checkbox"/>
9	94-by 14-m control bldg	For an expected 12-m-diam antenna; antenna bldg ucon by <input type="checkbox"/>
10	40-element telemetry antenna	
11	24-element telemetry antenna	
12	24-element telemetry antenna	

25X1

25X1

Top Secret

25X1

Top Secret

25X1

25X1

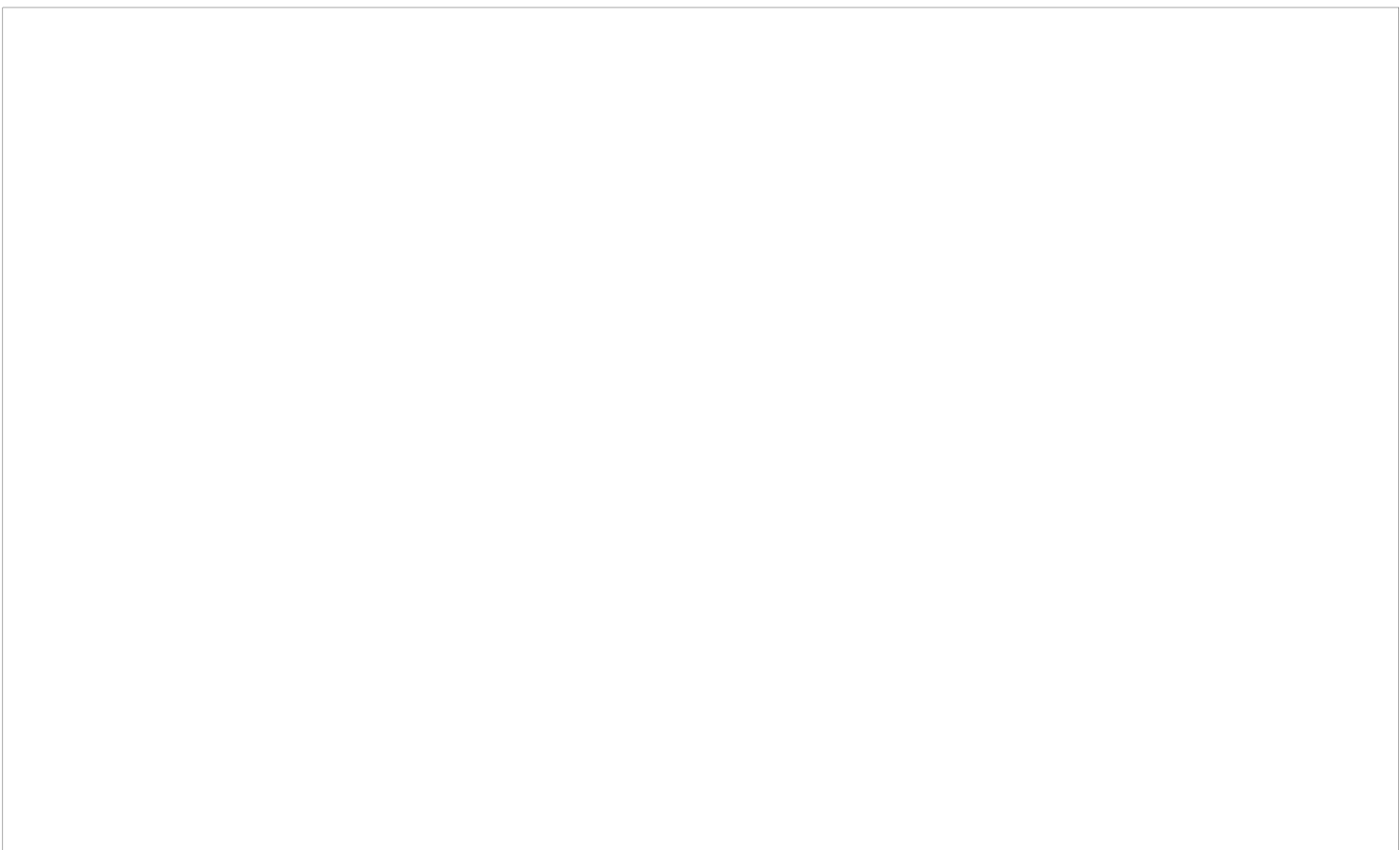


Table 21.
HF Communications Area B of Pogranichnyy
ESV Tracking Molniya Facility, USSR
(Items keyed to Figure 51)

This table in its entirety is classified SECRET/WWINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)
1	Fishbone antenna	BS 21 200 17 8 4.5	3.0-24.0		7	Horizontal dipole antenna	VGD 15 18	5.0-12.5		13	ROUND PLATE antenna			
2	Fishbone antenna	BS 21 200 17 8 4.5	3.0-24.0		8	Horizontal dipole antenna	VGD 20 18	3.75-9.38		14	Mast			
3	Quadrant antenna	UGD 32 27	3.03-6.7		9	Fishbone antenna	BS 21 200 17 8 4.5	3.0-24.0		15	Mast			
4	Fishbone antenna	BS 21 200 17 8 4.5	3.0-24.0		10	Fishbone antenna	BS 21 200 17 8 4.5	3.0-24.0		16	Mast			
5	Quadrant antenna	UGD 20 23	4.85-10.71		11	Fishbone antenna	BS 21 200 17 8 4.5	3.0-24.0		17	Mast			
6	Quadrant antenna	UGD 32 31	3.03-6.7		12	Mast				18	Quadrant antenna	UGD 8 17	12.14-26.79	
										19	Quadrant antenna	UGD 9 10	12.14-26.79	
										20	Quadrant antenna	UGD 20 27	4.85-10.71	

225X1

Top Secret

25X1

Top Secret

25X1

Table 22.
HF Communications Area A of Pogranichnyy
ESV Tracking Molniya Facility, USSR
(Items keyed to Figure 52)

This table in its entirety is classified SECRET//NOFORN

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Double rhombic antenna				Abandoned
2	Double rhombic antenna				Abandoned
3	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
4	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
5	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
6	Fishbone antenna	85 13 200 8 4.5	11	2.55-20.48	
7	Quadrant antenna	UGD 18 15		6.07-13.39	
8	Quadrant antenna	UGD 22 17		4.48-6.7	
9	Fishbone antenna	85 13 200 8 4.5	11	2.55-20.48	Abandoned
10	Double rhombic antenna				Abandoned
11	Double rhombic antenna				Abandoned
12	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
13	Quadrant antenna	UGD 22 17		4.48-6.7	
14	Quadrant antenna	UGD 20 10		4.85-10.71	
15	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
16	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
17	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
18	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
19	Fishbone antenna	852 21 200 8 4.5	17	3.0-24.0	
20	Quadrant antenna	UGD 22 17		4.48-6.7	

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
21	Quadrant antenna	UGD 18 15		6.07-13.39	
22	Horizontal dipole antenna	Under		Under	
23	Mast				
24	Mast				

Table 23.
Operations Area C of Pogranichnyy ESV
Tracking Molniya Facility, USSR
(Items keyed to Figure 52)

This table in its entirety is classified TOP SECRET

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	SHIP WHEEL antenna				
2	SHIP WHEEL antenna				
3	SHIP WHEEL antenna				
4	8-element telemetry antenna				Mounted on the roof of a bldg
5	8-element telemetry antenna				Mounted on the ground
6	40-element telemetry antenna				
7	ROUND PLATE antenna				
8	24-element telemetry antenna				
9	Horizontal dipole antenna	Under	Under	Under	
10	Calibration tower				
11	4-element telemetry antenna				
12	4-element telemetry antenna				
13	Calibration tower				
14	4-in-diam antenna				Radome covered, part of the type II satellite command system
15	4-in-diam antenna				Radome covered, part of the type II satellite command system
16	Calibration tower				
17	Six-bladed dipole antennas				Part of the type II satellite command system
18	Single rhombic antenna	Under	Under		
19	Single rhombic antenna	Under	Under		
20	Single rhombic antenna	Under	Under		
21	Single rhombic antenna	Under	Under		
22	Single rhombic antenna	Under	Under		
23	Single rhombic antenna	Under	Under		
24	Single rhombic antenna	Under	Under		
25	Single rhombic antenna	Under	Under		
26	Single rhombic antenna	Under	Under		
27	Calibration tower				

81. (S/D) Operations area B (Figure 51), near HF communications area B (Figure 51 and Table 21), contains 28 antennas, four calibration towers, ten antenna control buildings, and 20 support buildings. No significant activity was observed at the facility during the reporting period.

82. (S/D) Operations area C, near HF communications area A (Figure 52 and Table 22), contains a 25-meter-diameter antenna, an 8-meter-diameter antenna, an antenna control building, and a support building (Figure 52 and Table 23). No significant activity was observed during the reporting period.

83. (S/D) HF communications area A (Figure 52 and Table 22) contains 18 antennas, four abandoned antennas, an antenna control building, five support buildings, and two masts. No significant activity was observed during the reporting period.

84. (S/D) HF communications area B (Figure 51) contains 15 antennas, five masts, an antenna control building, and eight support buildings. No significant activity was observed during the reporting period.

Pushkino Space Tracking Facility

85. (S/D) The facility (Figure 53) contains a 25-meter-diameter antenna, a 16-element telemetry antenna, and six support buildings. No significant activity was observed during the reporting period.

Sary-Shagan ESV Tracking/Molniya Facility

86. (S/D) The facility consists of operations area A, another operations area, and a support area (Figure 54).

Top Secret

25X1

Table 24.
Operations Area of Sary-Shagan
ISV Tracking/Molniya Facility, USSR
(Items keyed to Figure 55)

This table in its entirety is classified SECRET//WNINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	12-m-diam ORBITA antenna				
2	8-m-diam antenna				Radome covered
3	15-m-diam Molniya antenna				
4	8-m-diam antenna				
5	Calibration tower				
6	Calibration tower				
7	15-m-diam Molniya antenna				
8	384-element meteorological antenna				
9	Antenna control bldg				With 3 single-element & 4 2-element Cuger antennas mounted on its roof
10	Antenna control bldg				With 1 2-element Cuger & 1 post single-element telemetry antennas mounted on its roof
11	5-element telemetry antenna				
12	QUAD WHEEL antenna				
13	[redacted] antenna				
14	Sliding-roof optical tracking bldg				
15	Optical tracking device				Radome covered
16	SHIP WHEEL antenna				
17	SHIP WHEEL antenna				
18	SHIP WHEEL antenna				
19	4-element telemetry antenna				
20	15-m-diam radome				Covering an antenna of unk type & size
21	Calibration tower				
22	4-m-diam antenna				Radome covered
23	40-element telemetry antenna				
24	24-element telemetry antenna				
25	24-element telemetry antenna				
26	Calibration tower				Assoc with 4-dish cluster antenna
27	QUAD LEAF antenna				
28	4-m-diam antenna				Radome covered
29	[redacted] antenna				Mounted by [redacted]
30	QUAD LEAF antenna				Mounted by [redacted]
31	Calibration tower				Assoc with 4-dish cluster antenna
32	4-element telemetry antenna				For [redacted]
33	60- by 18-in dual-polarization control bldg				antenna; bldg has been used since [redacted]
34	Calibration tower				
35	Single rhombic antenna	RG 85 1	6.85-14.28	[redacted]	
36	Single rhombic antenna	RG 85 1	13.71-28.57	[redacted]	

25X1

25X1

25X1

25X1

25X1

87. (S/D) The operations area (Figure 55 and Table 24) contains 34 antennas, 14 antenna control buildings, six calibration towers, one optical tracking building, one radome-covered optical tracking position, and over 20 support buildings. Significant activity included the mounting of a [redacted] antenna by [redacted] (not shown on graphic); the mounting of a QUAD LEAF antenna by [redacted] and the construction of a calibration tower.

25X1

25X1

25X1

88. (TSZU) [redacted] Operations area A contains type VIII and type IX satellite command systems³ (Figure 56). No significant activity was observed during the reporting period.

25X1

89. (S/D) The support area contains 100 support buildings. No significant activity was observed during the reporting period.

Simferopol Space Flight Center

90. (S/D) The facility consists of operations area A, another operations area, an HF communications area, and a support area (Figure 57).

91. (S/D) The operations area (Figure 58 and Table 25) contains 25 antennas, 11 antenna control buildings, four calibration towers, two calibration/lightning arresters, six masts, and 20 support buildings. Significant activity during the reporting period included the probable mounting of a [redacted] antenna by [redacted] and the modification of the 32-meter-diameter antenna feed by [redacted]

25X1

25X1

Page Denied

Top Secret [redacted]

Table 25.
Operations Area and HF Communications Area
Simferopol Space Flight Center, USSR
(Items keyed to Figure 58)

This table in its entirety is classified SECRET//WNINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
HF Communications Area					
1	Single rhombic antenna	Undet	Undet	[redacted]	
2	Single rhombic antenna	Undet	Undet	[redacted]	
3	Single rhombic antenna	Undet	Undet	[redacted]	
4	Single rhombic antenna	Undet	Undet	[redacted]	
5	Single rhombic antenna	Undet	Undet	[redacted]	
6	Single rhombic antenna	Undet	Undet	[redacted]	
7	Single rhombic antenna	Undet	Undet	[redacted]	
8	Single rhombic antenna	Undet	Undet	[redacted]	
9	Single rhombic antenna	Undet	Undet	[redacted]	
Operations Area					
10	[redacted] antenna				Radome covered; mounted on roof of dual-position control bldg; antenna prob mounted by [redacted]
11	12-m-diam ORBITA antenna				
12	384-element meteorological antenna				
13	Antenna control bldg				With 2 single-element & 2 2-element Cigar telemetry antennas mounted on its roof
14	5-element telemetry antenna				
15	5-element telemetry antenna				
16	QUAD WEDGE antenna				
17	[redacted] antenna				
18	Calibration tower				
19	2 Horn parabolic radar antennas				One antenna is on an azimuth of [redacted] while the other is on an azimuth of [redacted]. Azimuth of antennas undet. Radome covered.
20	2 Horn parabolic radar antennas				
21	4-m-diam antenna				
22	Calibration tower/lightning arrester				
23	Calibration tower/lightning arrester				
24	Mast				
25	Mast				
26	4-element telemetry antenna				
27	Calibration tower				
28	Mast				
29	4-element telemetry antenna				
30	SHIP WHEEL antenna				
31	SHIP WHEEL antenna				
32	Mast				
33	Mast				
34	Mast				
35	4-m-diam antenna				Radome covered. Present since [redacted] reason for their presence is unk.
36	2 SA-2 launchers				
37	24-element telemetry antenna				
38	Calibration tower				
39	8-m-diam antenna				
40	40-element telemetry antenna				
41	32-m-diam antenna				
42	Calibration tower				

Page Denied

Talsi Space Tracking Facility

- 94. (S/D) The facility consists of an operations area and an interferometer area (Figure 60).
- 95. (S/D) The operations area (Figure 61 and Table 26) contains nine antennas, an antenna control building, and five support buildings. No significant activity was observed during the reporting period.
- 96. (S/D) The interferometer area contains two VT-2B interferometers and two support buildings. No significant activity was observed during the reporting period.
- 97. (TSZU) The Talsi Space Tracking Facility is similar to the Kirzhach Space Tracking Facility. Both facilities acquire, track, and monitor ASAT and related payloads.³ No significant activity was observed during the reporting period.

**Table 26.
Operations Area of Talsi Space Tracking Facility, USSR
(Items keyed to Figure 61)**

This table in its entirety is classified SECRET/WNINTEL

Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)
1	Horizontal dipole	VGD	15	5.0-12.5
			14	
2	Horizontal dipole	VGD	24	3.13-7.81
			26	
3	Horizontal dipole	VGD	24	3.13-7.81
			26	
4	Horizontal dipole	VGD	15	5.0-12.5
			14	

Top Secret [redacted]

25X1

Tarusa Space Tracking Facility

98. (S/D) This facility is new since March 1979. It contains one QUAD LEAF antenna and four buildings under construction (Figure 62). The facility was under construction on [redacted] and by [redacted] the QUAD LEAF antenna had been mounted.

25X1

25X1

25X1

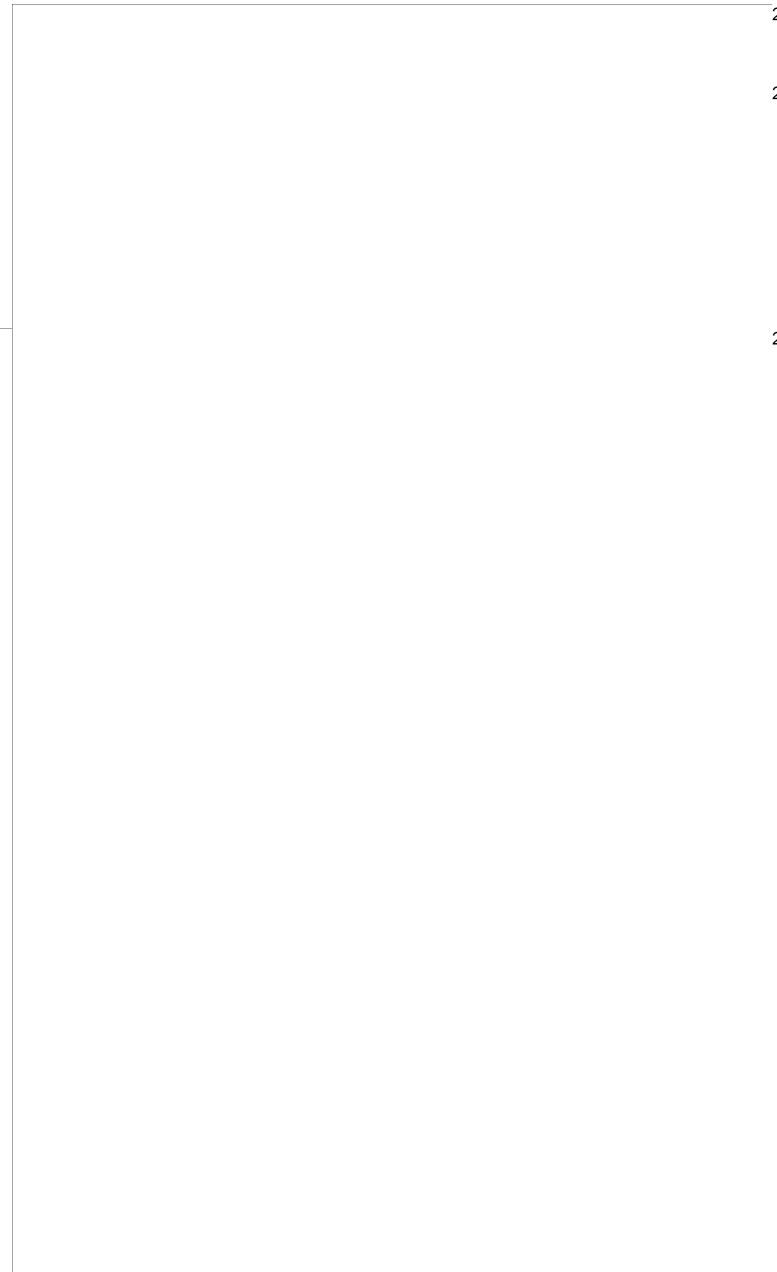
Tbilisi Sartichala ESV Tracking Facility

99. (S/D) The facility consists of an operations area, operations area A, and a support area (Figure 63).

100. (S/D) The operations area (Figure 64 and Table 27) contains 16 antennas, six antenna control buildings, two calibration towers (one probable), and ten support buildings. Activity during the reporting period included the start of construction of two buildings.

101. (S/D) Operations area A (Figure 65 and Table 28) contains five antennas, an antenna control building, and three support buildings. No significant activity was observed during the reporting period.

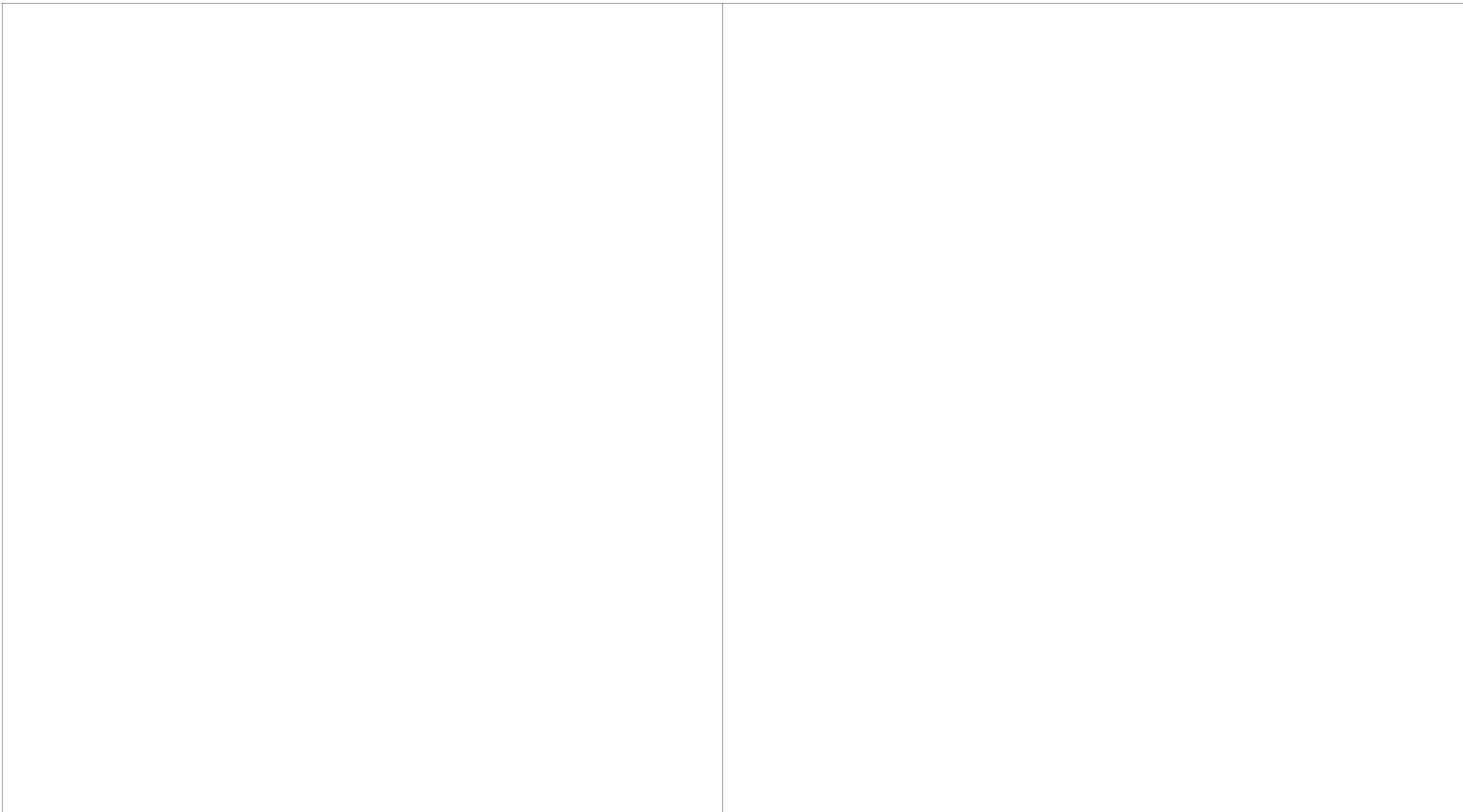
25X1



Top Secret

Top Secret

25X1



25X1

Table 27.
Operations Area of Tbilisi Sartichala
ESV Tracking Facility, USSR
(Items keyed to Figure 64)

This table in its entirety is classified TOP SECRET

Item	Description	Remarks
1	3 SA-2 launchers	At the fac since reason for their presence is unk
2	4-m-diam antenna	Radome covered; part of the type II satellite command system
3	Prob calibration tower	
4	384-element meteorological antenna	
5	Antenna control bldg	With 4 2-element & 2 poss single-element telemetry antennas on its roof
6	5-element telemetry antenna	
7	SHIP WHEEL antenna	
8	SHIP WHEEL antenna	
9	4-element telemetry antenna	
10	Calibration tower	
11	24-element telemetry antenna	
12	40-element telemetry antenna	
13	24-element telemetry antenna	
14	5-element telemetry antenna	

Table 28.
Operations Area A of Tbilisi Sartichala
ESV Tracking Facility, USSR
(Items keyed to Figure 65)

This table in its entirety is classified TOP SECRET

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Single rhombic antenna	RG $\frac{70}{8}$ 1.25	12.41-30.0		Consists of 6-sleeved dipole antennas arranged in a circular pattern
2	24-element telemetry antenna				
3	40-element telemetry antenna				
4	Type I satellite command system				
5	Single rhombic antenna	RG $\frac{70}{8}$ 1.25	12.41-30.0		

25X1

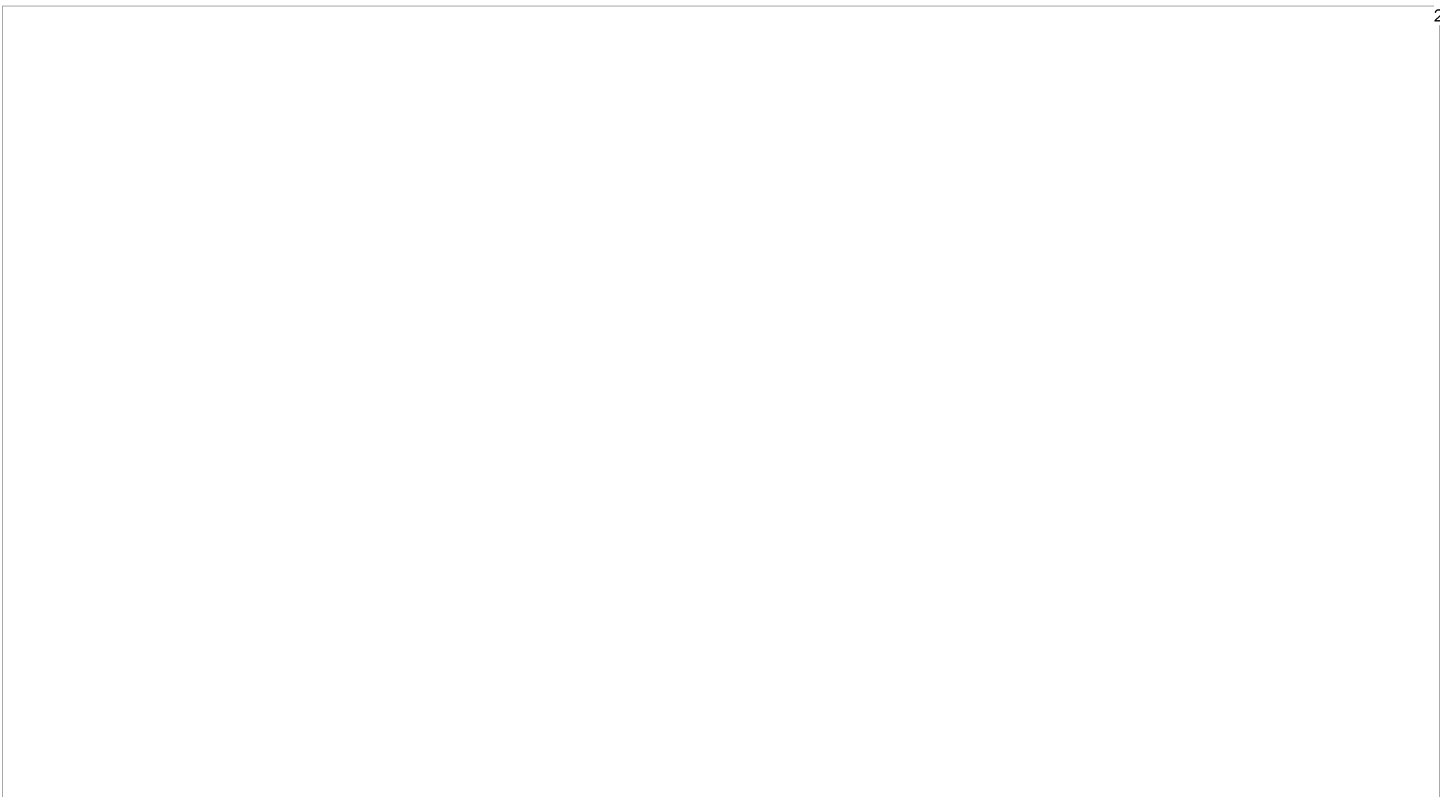
25X1

25X1

25X1

25X1

Page Denied



25X1

Tyuratam ESV Tracking Facility

104. (S/D) The facility consists of a western operations area, an eastern operations area, and a support area (Figure 67).

105. (TSZU, [redacted]) The eastern operations area (Figure 68) contains three antennas; type I, II, and III satellite command systems;³ five antenna control buildings; two calibration towers; and four support buildings. No significant activity was observed during the reporting period.

106. (S/D) The western operations area (Figure 69 and Table 29) contains 31 antennas, six antenna control buildings (one under construction), one tower of unknown function, two optical tracking devices, and 11 support buildings. Significant activity included the mounting of a 64-element telemetry antenna by [redacted].

107. (S/D) The support area contains 20 support buildings. No significant activity was observed during the reporting period.

Ulan-Ude ESV Tracking Facility

108. (S/D) The facility consists of an operations area, a support area, an HF communications area, a satellite communications area, operations area A, operations area B, and a construction camp (Figure 70).

109. (S/D) The operations area (Figure 71 and Table 30) contains 26 antennas, 16 antenna control buildings, five calibration towers, and 20 support buildings. Activity included the mounting of a [redacted]

meter-diameter antenna by [redacted] the mounting of a 12-meter-diameter antenna by [redacted] and the construction of a rail line.

110. (S/D) The support area contains 100 buildings. Activity included the completion or the start of construction of seven buildings.

111. (S/D) The HF communications area (Figure 72 and Table 31) contains 24 antennas and an antenna control building. No significant activity was observed during the reporting period.

112. (S/D) The satellite communications area (Figure 73) contains four antennas, an unoccupied antenna pedestal, two antenna control buildings, and two support buildings. No significant activity was observed during the reporting period.

113. (TSZU, [redacted]) Operations area A (Figure 74) contains ten antennas, which compose the type VIII and IX satellite command systems;³ five antenna control buildings; and three support buildings. No significant activity was observed during the reporting period.

114. (S/D) Operations area B (Figure 75) contains two antennas, two antenna control buildings, one unoccupied antenna pedestal, and two support buildings. No significant activity was observed during the reporting period.

115. (S/D) The construction camp contains 15 support buildings and sheds. No significant activity was observed during the reporting period.

25X1
25X1

25X1

25X1

25X1

25X1

(Continued p. 49)

[redacted]

Page Denied

Top Secret

Table 29.
Western Operations Area
of Tyuratam ESV Tracking Facility, USSR
(Items keyed to Figure 69)

This table in its entirety is classified SECRET/WNINTEL

Item	Description	Remarks
1	4-element telemetry antenna	
2	384-element meteorological antenna	
3	MERCURY PLATE radrel antenna	
4	MERCURY PLATE radrel antenna	
5	SHIP WHEEL antenna	
6	Tower	
7	5-element telemetry antenna	
8	5-element telemetry antenna	
9	12-m-diam ORBITA antenna	
10	Control bldg	For a 4-dish cluster antenna; bldg has been ucon since [redacted]
11	40-element telemetry antenna	
12	24-element telemetry antenna	
13	7.2-element Cigar & 1 single-element telemetry antennas	Mounted on roof of bldg
14	5-element telemetry antenna	
15	4-element telemetry antenna	
16	Pedestal	For 64-element telemetry antenna; const began by [redacted] by [redacted] antenna was mounted on its pedestal 3 m in diam
17	D-band radar	
18	Antenna components	
19	4-element telemetry antenna	For a 64-element telemetry antenna
20	[redacted] antenna	
21	4-element telemetry antenna	
22	5-element telemetry antenna	
23	Antenna control bldg	With 5 2-element Cigar telemetry antennas mounted on its roof
24	Optical tracking device	
25	Optical tracking device	
26	4-dish cluster antenna shipping crates	
27	2 SA-2 launchers	Present since [redacted] reason for their presence is unk

25X1

25X1

25X1

25X1

25X1

25X1

25X1

Top Secret

25X1

Table 30. Operations Area of Ulan-Ude ESV Tracking Facility, USSR (Items keyed to Figure 71)

This table is in entirety a classified TOP SECRET ZARY LMBRA

Item	Description	Remarks	Item	Description	Remarks
1	12-m-dish antenna	Mounted by [redacted]	17	4-m-dish antenna	Radome covered; part of type III satellite command system
2	12-m-dish antenna		18	[redacted] antenna	
3	Calibration tower		19	Xenon control bldg	With 24 element Cigar
4	Calibration tower		20	300-watt photovoltaic	4 x 2 element telemetry antennas
5	[redacted] antenna	Radome covered	21	[redacted] antenna	
6	[redacted] antenna	Radome covered; mounted by [redacted]	22	Calibration tower	For 4-dish cluster antenna
7	Calibration tower		23	5-element telemetry antenna	
8	Radome covered antenna	Link dish	24	24 element telemetry antenna	
9	4-m-dish antenna	Radome covered; part of type II satellite command system	25	QUAD HEDGE antenna	
10	4-element telemetry antenna		26	2 MA-2 launchers	At fix site; [redacted]
11	SOOP WHEU antenna		27	40 element telemetry antenna	[redacted] antenna in link
12	SOOP WHEU antenna		28	QUAD HEDGE antenna	
13	SOOP WHEU antenna		29	Calibration tower	For 4-dish cluster antenna
14	4-element telemetry antenna		30	Antenna control bldg	Used by [redacted]
15	2 element Cigar telemetry antenna				
16	Single element telemetry antenna				

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1



Table 31.
HF Communications Area of Ulan-Ude ESV
Tracking Facility, USSR
(Items keyed to Figure 72)

This table in its entirety is classified SECRET//SI//NF//NF

Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Item	Antenna Type	Soviet Designator	Frequency (MHz)	Azimuth (deg)
1	Fishbone	BS2 21 200 8 45	17	3.0-24.0	9	Fishbone	BS2 21 200 8 45	25	3.0-24.0	17	Fishbone	BS2 21 200 8 45	17	3.0-24.0
2	Fishbone	BS2 13 200 9.4 53	11	2.55-20.46	10	Fishbone	BS2 21 200 8 45	25	3.0-24.0	18	Fishbone	BS 21 200 8 45	17	3.0-24.0
3	Fishbone	BS2 21 200 8 45	17	3.0-24.0	11	Fishbone	BS 21 200 8 45	17	3.0-24.0	19	Fishbone	BS 21 200 8 45	17	3.0-24.0
4	Fishbone	BS2 21 200 8 45	25	3.0-24.0	12	Fishbone	BS2 21 200 8 45	17	3.0-24.0	20	Fishbone	BS 21 200 8 45	25	3.0-24.0
5	Fishbone	BS2 21 200 8 45	25	3.0-24.0	13	Fishbone	BS 21 200 8 45	17	3.0-24.0	21	Quadrant	UGD 40 25		2.43-5.36
6	Horizontal dipole	VDG 24 12		3.13-7.81	14	Fishbone	BS2 21 200 8 45	25	3.0-24.0	22	Horizontal dipole	VDG 24 23		3.13-7.81
7	Quadrant	UGD 20 22		4.65-10.71	15	Fishbone	BS2 21 200 8 45	25	3.0-24.0	23	Horizontal dipole	VDG 24 23		3.13-7.81
8	Quadrant	UGD 8 12		12.14-26.79	16	Fishbone	BS 21 200 8 45	17	3.0-24.0	24	Single rhombic	RG 65 4	1	6.7-16.8

Page Denied

Next 1 Page(s) In Document Denied



Vicak Space Tracking Facility

116. (S/D) The facility consists of an operations area and a support area (Figure 76).

117. (S/D) The operations area (Figure 77) contains five antennas, three antenna control buildings, one calibration tower, and 20 support buildings. No significant activity was observed during the reporting period.

118. (S/D) Four possible antennas were observed on the outer edge of the 12-meter-diameter antenna (inset, Figure 77). Each of the possible antennas is cable connected to the feedhorn shroud in the center of the 12-meter-diameter antenna. The possible antennas have probably been present since the antenna was constructed but have only recently been identified.

119. (S/D) This facility, together with the Andreyevka Satellite Communications Station, is reported to be a sigint facility targeted against free-world communications satellite systems.²



Top Secret

25X1

Table 32.
Operations Area of Yorkuta ESV
Tracking Facility, USSR
(Items keyed to Figure 79)

This table in its entirety is classified TOP SECRET

Item	Description	Remarks
1	8-m-diam antenna	Radome covered
2	76- by 19-m control bldg	For a single 12-m-diam antenna; bldg ucon by
3	Calibration tower	Radome covered
4	3-m-diam antenna	Radome covered; part
5	4-m-diam antenna	of type III satellite command system
6	Antenna control bldg	With 2 SHIP WHEEL & 2 4-element telemetry antennas mounted on its roof
7	QUAD LEAF antenna	Mounted by
8	Antenna control bldg	With 2 single-element, 2 2-element, & 4 2-element Cigar telemetry antennas mounted on its roof
9	5-element telemetry antenna	
10	Pedestal	For 40-element telemetry antenna; antenna (not on graphic); mounted by
11	Pedestal	For 40-element telemetry antenna; antenna (not on graphic); mounted by
12	Pedestal	For 40-element telemetry antenna; antenna (not on graphic); mounted by
13	Pedestal	For 40-element telemetry antenna; antenna (not on graphic); mounted by

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

Top Secret [redacted]

25X1

Vorkuta ESV Tracking Facility

120. (S/D) The facility contains an operations area, an HF communications area, and a support area (Figure 78).

121. (S/D) The operations area (Figure 79 and Table 32) contains 21 antennas, six antenna control buildings (one under construction), a calibration tower, and ten support buildings. Significant activity included the mounting of a QUAD LEAF antenna by [redacted] the start of construction on a 76- by 19-meter control building for a single 12-meter-diameter antenna by [redacted] the mounting of four 40-element telemetry antennas by [redacted] and the completion of a support building. The 76- by 19-meter control building or a modified version was also under construction at five other Soviet space tracking facilities (Table 1). Four 40-element telemetry antennas were also under construction at Moscow/Shchelkovo ESV Tracking Facility.

122. (S/D) The HF communications area (Figure 80 and Table 33) contains seven antennas, an antenna control building, and two support buildings. Significant activity included the construction of two fishbone antennas by [redacted]

123. (S/D) The support area contains 25 support buildings. No significant activity was observed during the reporting period.

Yakutsk Space Tracking Facility

124. (S/D) The facility consists of an operations area and a support area (Figure 81).

125. (S/D) The operations area (Figure 82 and Table 34) contains 11 antennas, six antenna control buildings, two calibration towers, two optical tracking support buildings, an optical tracking building, and four support buildings. Significant activity included the mounting of a [redacted] diameter antenna by [redacted] the start of construction of a 76- by 19-meter control building for a single 12-meter-diameter antenna by [redacted] the mounting of a QUAD LEAF antenna by [redacted] (not shown on graphic); and the construction of three optical tracking-associated buildings.

126. (S/D) An addition to the [redacted] antenna control building was constructed, and a probable calibration tower was mounted on the addition. The presence of the probable calibration antenna suggests that the [redacted] antenna is similar in function to those mounted on the dual-position 60- by 18-meter control buildings (Table 4).

127. (S/D) The support area contains 25 support buildings. Construction of a support building was begun during the reporting period.

Yeniseysk ESV Tracking/Molniya Facility

128. (S/D) The facility consists of an operations area, an HF communications area, and a support area (Figure 83).

129. (TSZU/[redacted]) The operations area is divided into an eastern and a western portion. The eastern portion (Figure 84 and Table 35) contains type VIII and IX satellite command systems,³ five other antennas, four antenna control buildings, two calibration towers, an abandoned L-shaped tracking device, and seven support buildings. Significant activity included the mounting of a [redacted] antenna by [redacted] the removal of all 5-meter-diameter antennas from the L-shaped tracking device by [redacted] and the completion of a support building.

(Continued p. 55)

**Table 33.
HF Communications Area of Vorkuta ESV
Tracking Facility, USSR
(Items keyed to Figure 80)**

This table in its entirety is classified SECRET/WWINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Fishbone antenna	BS2 21 200 17 8 4.5	3.0-24.0	[redacted]	Completed by [redacted]
2	Fishbone antenna	BS2 21 200 17 8 4.5	3.0-24.0		Completed by [redacted]
3	Horizontal dipole antenna	VGD 15 11	5.0-12.5		
4	Horizontal dipole antenna	VGD 30 24	2.5-6.25		
5	Fishbone antenna	BS2 21 200 17 8 4.5	3.0-24.0		
6	Fishbone antenna	BS2 21 200 17 8 4.5	3.0-24.0		
7	Fishbone antenna	BS2 21 200 17 8 4.5	3.0-24.0		
8	40-element telemetry antenna components				

25X1

25X1
25X1

25X1

25X1
25X1
25X1

25X1
25X1

25X1

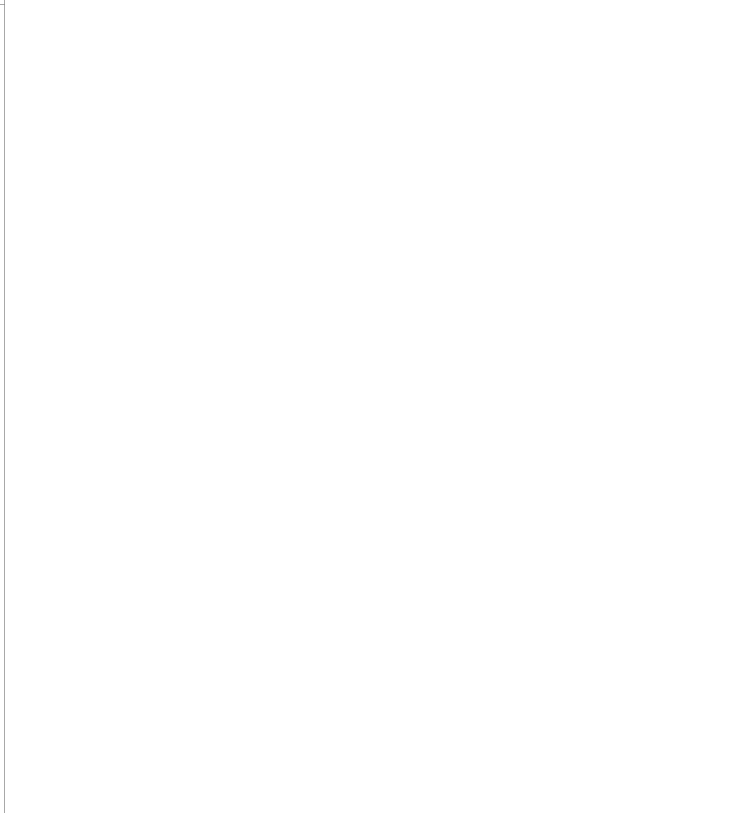
25X1
25X1
25X1

25X1
25X1

25X1

Top Secret [redacted]

25X1



25X1

Table 34.
Operations Area of Yakutsk
Space Tracking Facility, USSR
(Items keyed to Figure 82)

This table in its entirety is classified TOP SECRET [redacted]

Item	Description	Remarks
1	Calibration tower	
2	[redacted] antenna	Radome covered; mounted by [redacted]
3	Antenna control bldg	With 2 SHIP WHEEL & 1 4-element telemetry antenna mounted on its roof
4	Calibration tower	
5	76- by 19-m control bldg	For a single 12-m antenna; bldg ucon by [redacted]
6	5-element telemetry antenna	
7	Antenna control bldg	With 2 2-element Cigar & 1 2-element telemetry antenna mounted on its roof
8	4-m-diam antenna	Radome covered; part of type III satellite command system
9	QUAD LEAF antenna	Mounted by [redacted]
10	Optical tracking support bldg	
11	Optical tracking support bldg	
12	Optical tracking bldg	With sliding roof sect

25X1

25X1

25X1

25X1

25X1

2 -
Secret

RCA-03/0001/82

Page Denied

Top Secret [redacted]

25X1

25X1

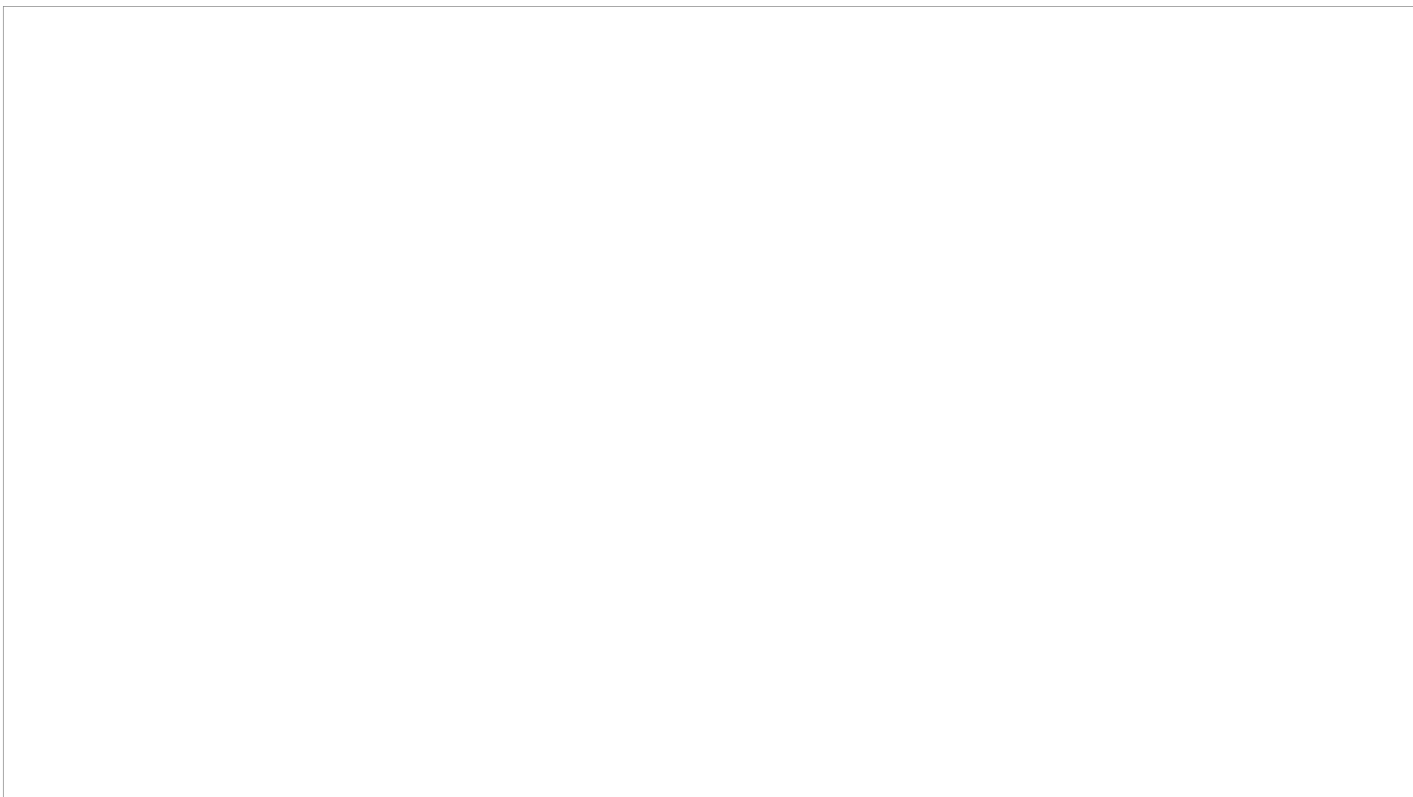


Table 35.
Operations Area of Yeniseysk ESV
Tracking/Molniya Facility, USSR
(Items keyed to Figures 84 and 85)

This table in its entirety is classified TOP SECRET [redacted]

Item	Description	Remarks	Item	Description	Remarks	Item	Description	Remarks
Eastern Portion (Figure 84)			Western Portion (Figure 85)			30	4-m-diam antenna	Radome covered; part of the type II satellite command system
1	8-m-diam antenna	Radome covered	17	Calibration tower	[redacted] radome-covered [redacted] antenna expected to be mounted on roof	31	4-m diam antenna	Radome covered; part of the type III satellite command system
2	8-m-diam antenna	Radome covered	18	8-m-diam antenna	Radome covered	32	4-element telemetry antenna	
3	[redacted] antenna	Mounted by [redacted]	19	8-m-diam antenna		33	SHIP WHEEL antenna	
4	8-m-diam antenna	Radome covered	20	15-m-diam Molniya antenna		34	SHIP WHEEL antenna	
5	3-m-diam antenna		21	4-element telemetry antenna		35	SHIP WHEEL antenna	
6	12-m-diam antenna		22	15-m-diam Molniya antenna		36	5-element telemetry antenna	
7	Radome	For [redacted] antenna ucon	23	Antenna control bldg	With 3 2-element Cigar & 1 single-element telemetry antenna	37	QUAD WEDGE antenna	
8	3-m-diam antenna	Radome covered	24	384-element meteorological antenna		38	[redacted] antenna	
9	8-m-diam antenna	Radome covered	25	2 R-400 radref antennas		39	QUAD LEAF antenna	Mounted by [redacted] For 4-dish cluster antenna
10	3-m-diam antenna		26	4-element telemetry antenna		40	Calibration tower	For 4-dish cluster antenna
11	3-m-diam antenna		27	Calibration tower		41	QUAD LEAF antenna	Present by [redacted]
12	Calibration tower		28	5-element telemetry antenna		42	QUAD LEAF antenna	shipping crates
13	12-m-diam antenna		29	4-element telemetry antenna		43	Prob antenna control bldg	Ucon by [redacted]
14	3-m-diam antenna	Radome covered				44	QUAD LEAF antenna	
15	3-m-diam antenna	Dual-position; ucon since						
16	Antenna control bldg							

25X1

25X1

25X1

25X1

25X1

25X1

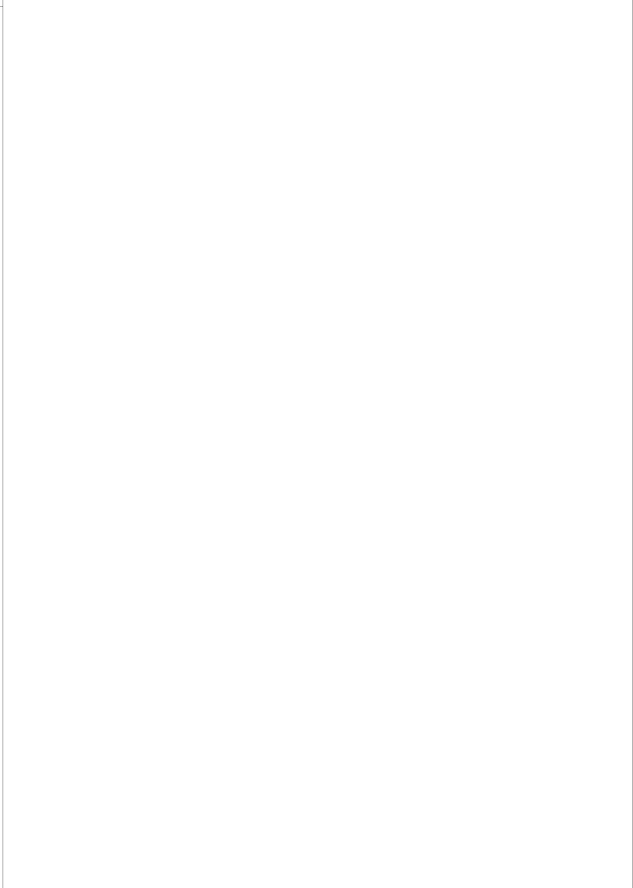
25X1

25X1

25X1

Top Secret

25X1



25X1

25X1

130. (S/D) The western portion (Figure 85 and Table 35) of the operations area contains 24 antennas, 13 antenna control buildings, three calibration towers, and 20 support buildings. Significant activity included the mounting of a QUAD LEAF antenna by the start of construction of a 94- by 14-meter control building for two 12-meter-diameter antennas by the arrival of eight QUAD LEAF antenna shipping crates by and the installation of 12-meter-diameter antenna components by

25X1
25X1
25X1

131. (S/D) The HF communications area (Figure 86 and Table 36) contains ten antennas, one tower of unknown function, an antenna control building, and a security building. The entire area has been constructed since March 1979.

Table 36.
HF Communications Area of Yeniseysk ESV
Tracking/Molniya Facility, USSR
(Items keyed to Figure 86)

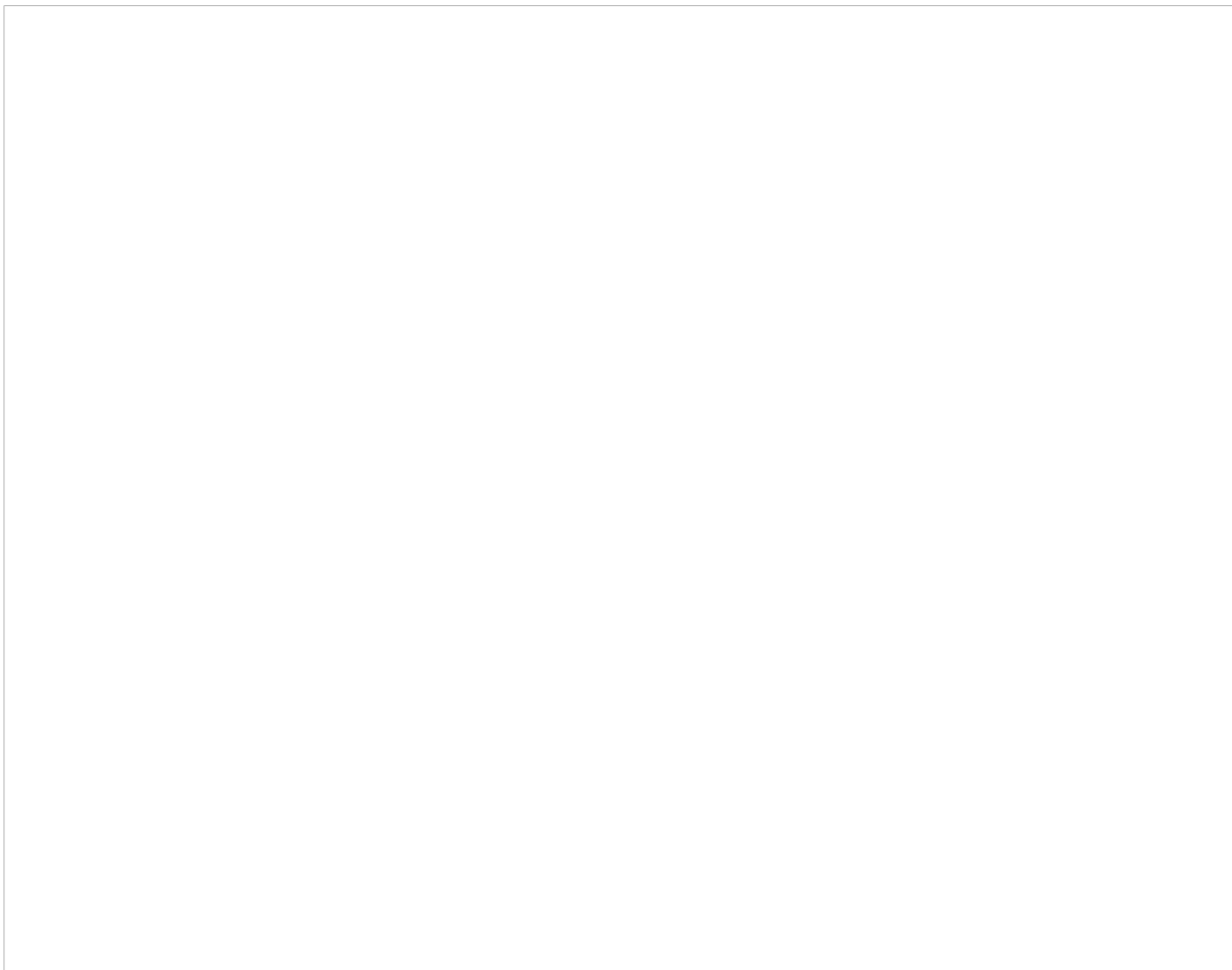
This table in its entirety is classified SECRET/WNINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)
1	Fishbone antenna	BS2 21 200 8 4.5	25	3.0-24.0
2	Tower			
3	Fishbone antenna	BS2 21 200 8 4.5	17	3.0-24.0
4	Fishbone antenna	BS2 21 200 8 4.5	25	3.0-24.0
5	Fishbone antenna	BS2 13 200 9.4 5.3	11	3.0-24.0
6	Fishbone antenna	BS2 21 200 8 4.5	25	3.0-24.0
7	Horizontal dipole antenna	VDG 30 23		2.5-6.25
8	Fishbone antenna	BS2 21 200 8 4.5	25	3.0-24.0
9	Horizontal dipole antenna	VDG 15 14		5.0-12.5
10	2 ROUND PLATE antennas			

Top Secret

25X1

25X1



**Yevpatoria Deep Space Tracking Facilities
Central, North, and South**

132. (S/D) The three facilities (Figure 87) form a space tracking complex that support deep-space programs and satellite command and control functions.

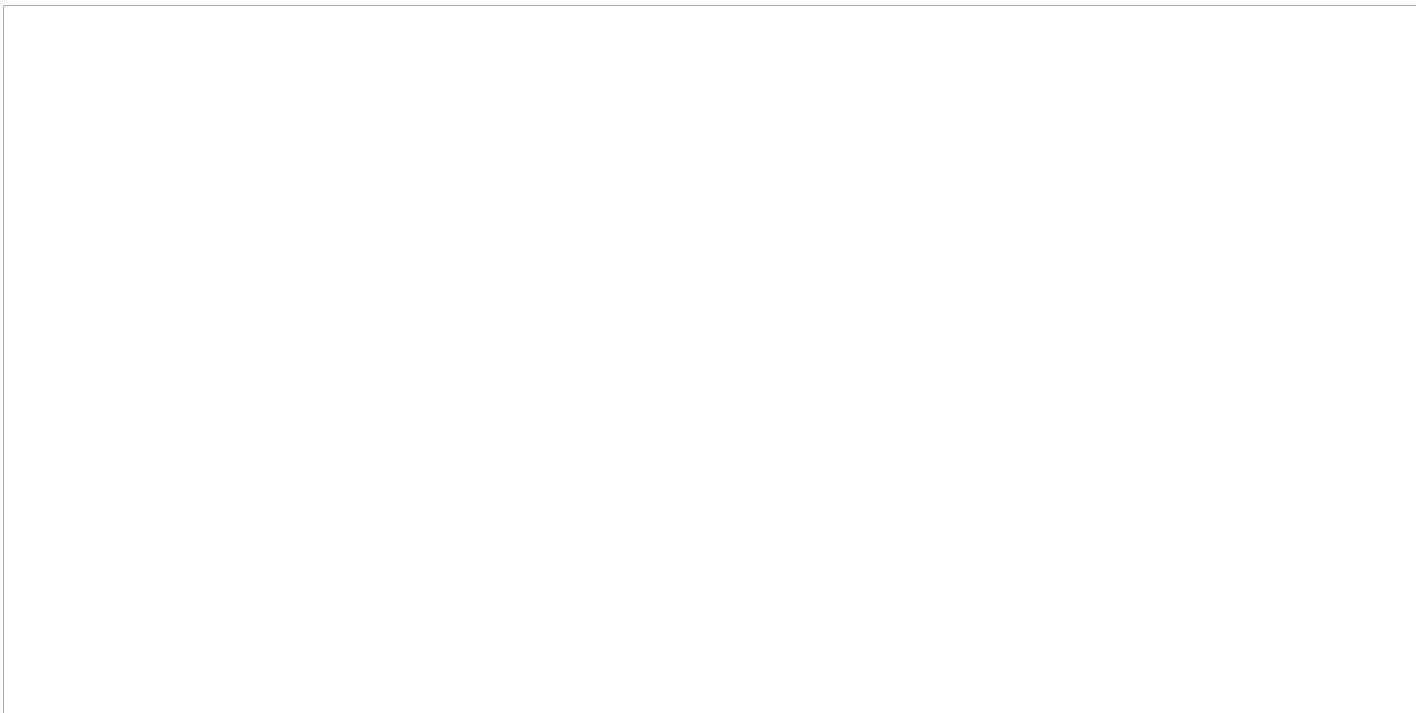
133. (S/D) **Yevpatoria Deep Space Tracking Facility Central.** The facility (Figure 88) contains a 70-meter-diameter antenna, a large antenna control building, and ten support buildings. Significant activity included the installation of an additional top half section of a feedhorn shroud for the 70-meter-diameter antenna.

Top Secret

25X1

Top Secret

25X1



25X1

134. (S/D) **Yevpatoria Deep Space Tracking Facility North.** The facility consists of an operations area and a support area (Figure 89).

135. (S/D) The operations area (Figure 90 and Table 37) contains 22 antennas, eight antenna control buildings, an optical tracking position, and 20 support buildings. Activity included the mounting of a QUAD LEAF antenna by initial construction on a 25- by 18-meter control building for a antenna by and the completion of a new probable direction-finding antenna array by

136. (S/D) The new probable direction-finding antenna array (Figure 91) consists of 24 masts that form a circle 50 meters in diameter. Each mast is high with a cross member at its top. The masts are 7 meters apart.

137. (S/D) The support area contains 20 support buildings. No significant activity was observed during the reporting period.

138. (S/D) **Yevpatoria Deep Space Tracking Facility South.** The facility consists of an operations area and a support area (Figure 92).

139. (S/D) The operations area (Figure 93 and Table 38) contains nine antennas (two partially dismantled), four antenna control buildings, and eight support buildings. Significant activity included the mounting of a 32-meter-diameter antenna by However, the antenna feedhorn and subreflector have not been installed.

140. (S/D) The support area contains 20 support buildings. Significant activity included the completion of three support buildings in the southern portion of the facility.

Table 37.
Yevpatoria Deep Space Tracking Facility North, USSR
(Items keyed to Figure 90)

This table in its entirety is classified SECRET/WNINTEL

Item	Description	Remarks
1	12-m-diam ORBITA antenna	
2	12-m-diam ORBITA antenna	
3	8-m-diam antenna	
4	25-m-diam antenna	
5	25-m-diam antenna	
6	8-dish cluster antenna	
7	Four-element telemetry antenna	
8	QUAD LEAF antenna	Mounted by
9	Optical tracking position	
10	2-element Cigar telemetry antenna	
11	4-element telemetry antenna	
12	QUAD LEAF antenna	
13	384-element meteorological telemetry antenna	
14	Horn parabolic radtel antenna	
15	QUAD WEDGE antenna	
16	 antenna	
17	SHIP WHEEL antenna	
18	2-element Cigar telemetry antenna	
19	4-element telemetry antenna	
20	2-element Cigar telemetry antenna	
21	8-dish cluster antenna	
22	Antenna control bldg	For a antenna; ucon by
23	25-m-diam antenna	
24	Prob DF antenna array	New

25X1
25X1
25X1

25X1

25X1

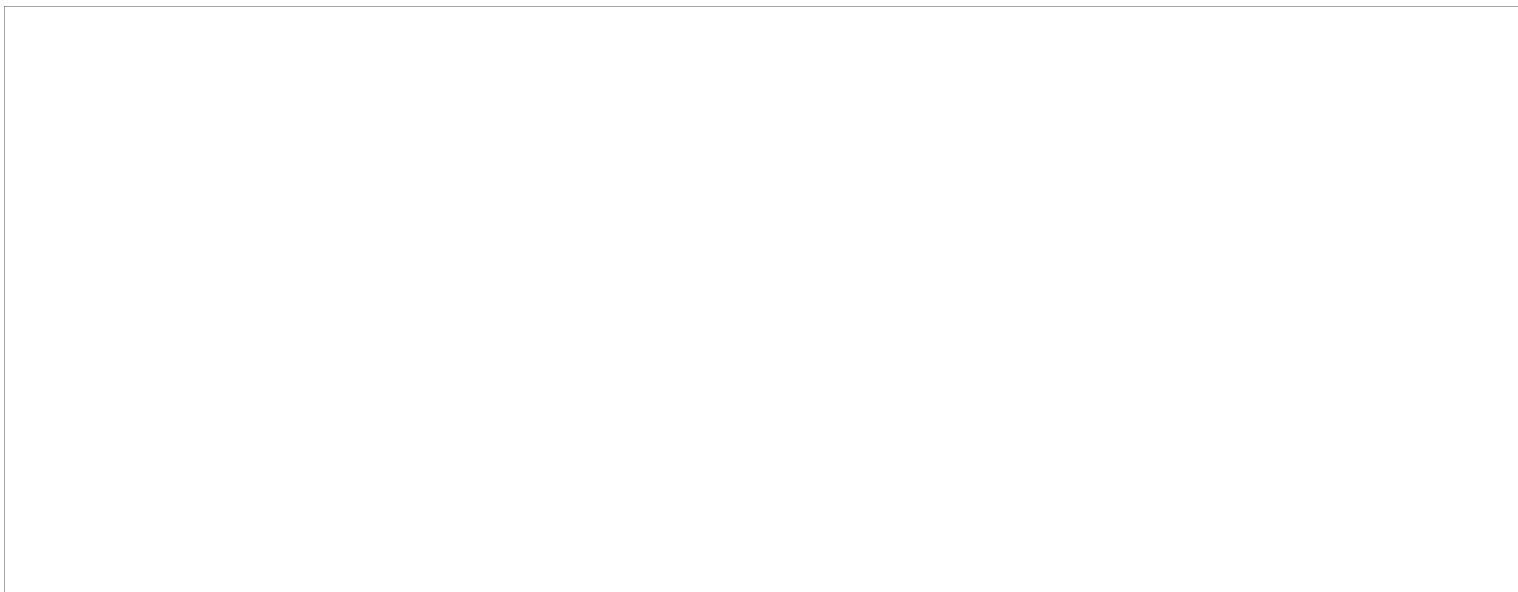
25X1
25X1

25X1
25X1

Page Denied

Top Secret

25X1



25X1



25X1

Table 38.
Yevpatoria Deep Tracking Facility South, USSR
(Items keyed to Figure 93)

This table in its entirety is classified SECRET/WINTEL

Item	Description	Soviet Designator	Frequency (MHz)	Azimuth (deg)	Remarks
1	Double rhombic antenna				Mast removed in 77
2	Double rhombic antenna				Mast removed in 79
3	Double rhombic antenna	RGD $\frac{65}{4}$ 1	13.71-28.57		
4	Double rhombic antenna	RGD $\frac{65}{4}$ 1	8.0-16.67		
5	Horizontal dipole antenna	VGD $\frac{20}{22}$	3.75-9.38		
6	Horizontal dipole antenna	VGD $\frac{24}{22}$	3.13-7.81		
7	16-element telemetry antenna				
8	8-dish cluster antenna array				
9	32-m-diam antenna				Mounted by
10	Mast				
11	Mast				

25X1

25X1

Top Secret

25X1

Page Denied

Top Secret

25X1

REFERENCES

IMAGERY

(S/D) All available satellite imagery acquired as of [redacted] was used in the preparation of this report. 25X1

MAPS OR CHARTS

SAC. US Air Target Chart, Series 200, Various sheets, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

- 1. NPIC. [redacted] RCA-03/0002/79, *Soviet Space Tracking Facilities, July 1977—March 1979 (TSR)*, Jul 79 (TOP SECRET [redacted]) 25X1
- 2. DIA. [redacted], DST-2660P-107-77-SAO, *Trends and Developments, Foreign Technology Weapons and Systems*, 29 Aug 77 (TOP SECRET [redacted]) 25X1
- 3. DIA. [redacted] DST-1450S-264-80-SAO, *Space Systems Control Study—USSR (U)*, 18 Aug 80 TOP SECRET [redacted] 25X1

*Extracted information is classified SECRET/WNINTEL.

**Extracted information is classified TOP SECRET [redacted] 25X1

RELATED DOCUMENT

CIA. [redacted] *Handbook of Soviet Space Systems Support Antennas (S)*, Sep 81 (TOP SECRET [redacted]) 25X1

REQUIREMENTS

COMIREX C01
Project 542054C

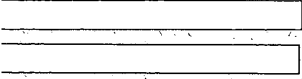
(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1

Top Secret

RCA-03/0001/82

25X1

Top Secret



Top Secret